The Cotton Gin and Oil Mill

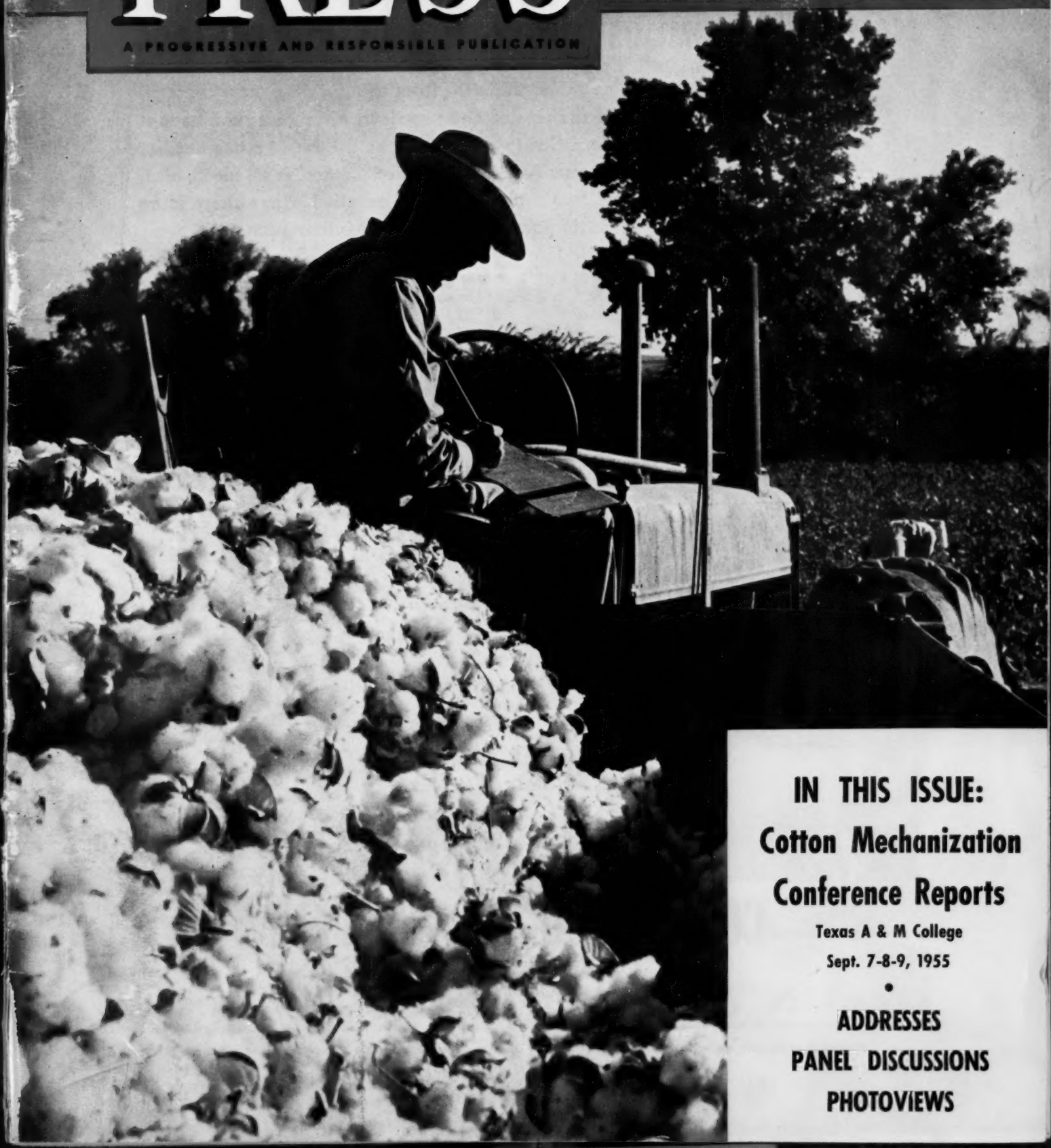
PRESS

SEPTEMBER 24, 1955

56th year

THE MAGAZINE OF THE COTTON GINNING AND OILSEED PROCESSING INDUSTRIES

A PROGRESSIVE AND RESPONSIBLE PUBLICATION



IN THIS ISSUE:

Cotton Mechanization Conference Reports

Texas A & M College

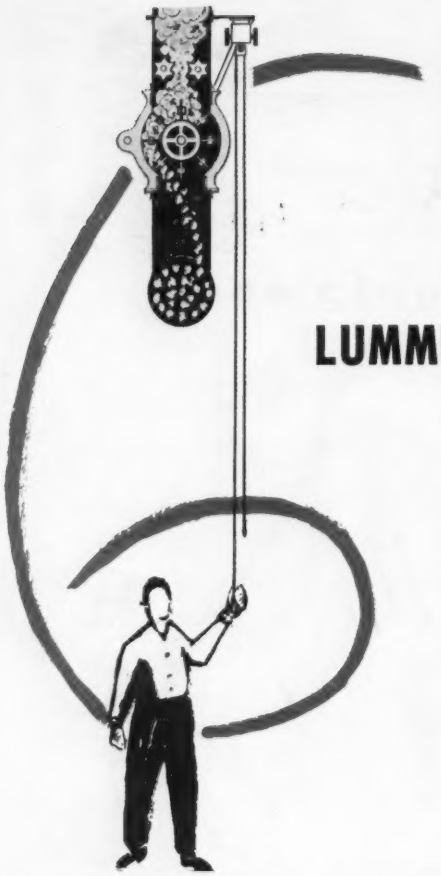
Sept. 7-8-9, 1955

•

ADDRESSES

PANEL DISCUSSIONS

PHOTOVIEWS



CONTROL RATE OF TELESCOPE FLOW FROM THE GIN FLOOR

No matter how green the man on the wagon, Lummus has cured the problem of slugging or choking with

LUMMUS AUTOMATIC SUCTION CONTROL

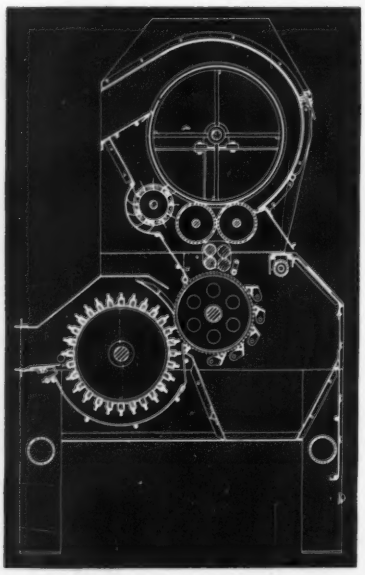
The ginner himself, from the gin floor, now can control the rate of flow; set it to his choice; and have it automatically maintained at the rate he has chosen. Lummus Automatic Suction Control is all mechanical and fool proof — can be installed where there is no electric power. Write for full information.

LUMMUS COTTON GIN CO.

Established 1869

DALLAS, TEXAS **COLUMBUS, GA.** MEMPHIS, TENN.

CONTINENTAL'S Latest Model



Improved LINT CLEANER . . . .

Continental Lint Cleaners — the first of their type and by far the most effective ever designed for the cotton gin industry — have now been further improved to give still greater efficiency than ever before. New improvements in our latest models incorporate the experience of more than 7 years' outstandingly successful operation under widely varying conditions. They include:

- A newly designed condenser which produces a better bat in thinness and uniformity.
- An extra pair of feed rollers which contribute further towards a more uniform deposit of the cotton on the saw.

Combined effect of these improvements is to give more cleaning effect on individual fibres.

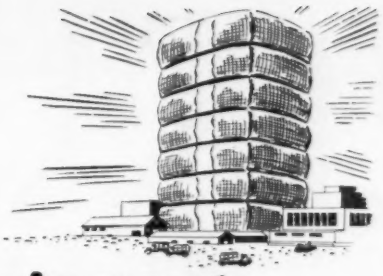
More than 3,000 Continental saw type Lint Cleaners are now in use—**more than all other makes combined.** Write for Bulletin 202-B, which gives a detailed description of the new models.

CONTINENTAL GIN COMPANY

BIRMINGHAM, ALABAMA

ATLANTA • *DALLAS* • *MEMPHIS*

Entered as second-class matter February 4, 1905, at the Post Office at Dallas, Texas, Under Act of Congress of March 3, 1897



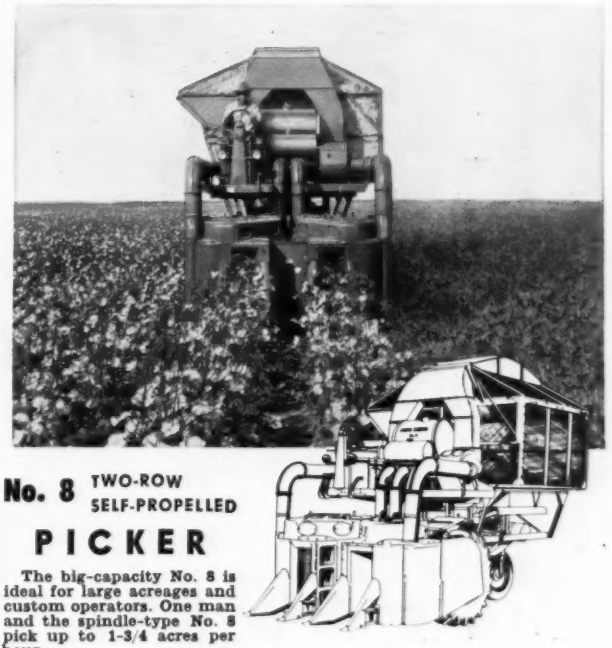
Wherever Cotton Is King
GROWERS COLLECT ROYALTIES
with
JOHN DEERE Harvesting Equipment

EVERY cotton grower wants a bigger share of the cotton dollar. All authorities agree that you can take a bigger percentage by mechanizing harvests . . . and you can be sure of a bigger bonus from every bale when you harvest your crops with a John Deere Picker or Stripper. You'll take full advantage of mechanization—cut picking costs . . . speed work . . . save more cotton . . . reduce weather losses.

The cost-cutting advantages of harvesting with a John Deere Picker or Stripper over hand picking are obvious. Instead of paying an army of hand pickers today's high wages, one man can do the job—and you pocket the profits. You're ready to harvest when the crop is ready . . . when the weather is right. You don't have to hire, supervise, and pay hand labor—slow, tedious, time-consuming jobs and every one a headache.

If you've been picking or stripping your cotton with inefficient machines, it's time for a change. The cotton-saving performance . . . lower operating costs . . . and rugged dependability of a John Deere mean many more years of profitable operation.

See your John Deere dealer. Write today for free descriptive literature.



No. 8 TWO-ROW SELF-PROPELLED
PICKER

The big-capacity No. 8 is ideal for large acreages and custom operators. One man and the spindle-type No. 8 pick up to 1-3/4 acres per hour.

No. 1 ONE-ROW MOUNTED
PICKER

One man and the spindle-type No. 1 pick up to an acre per hour. It mounts quickly on the tractor with no costly tractor conversions.

NEW TWO-ROW MOUNTED
STRIPPER

The new No. 16 does a once-over stripping job, saving more bolls. It's adaptable to row spacings of 36 through 42 inches . . . mounts quickly . . . and it's ruggedly built.

JOHN DEERE QUALITY FARM EQUIPMENT

JOHN DEERE • Moline, Illinois

USE THE
BEST BAGGING
IMPORTED INTO THE
U. S. A. TODAY!

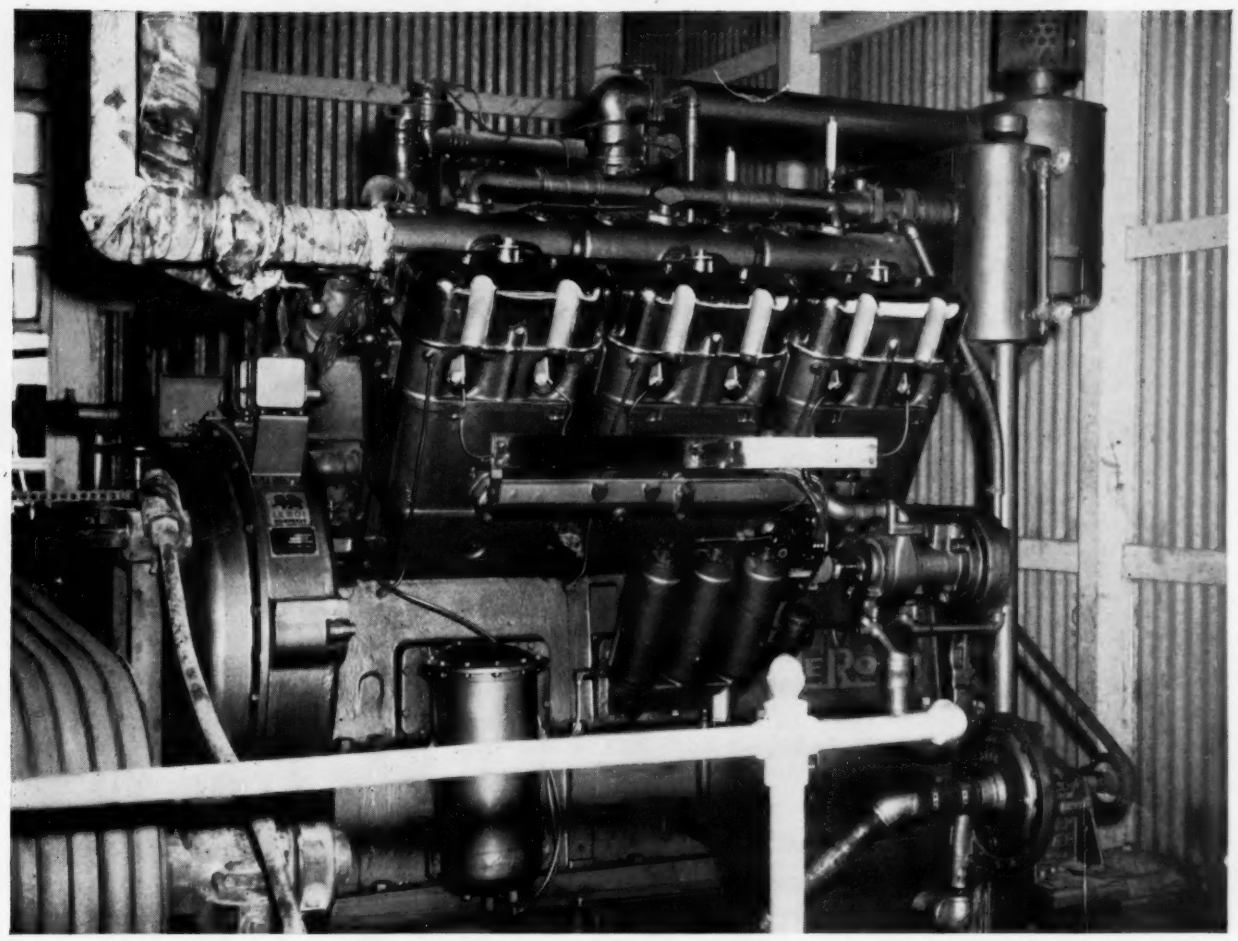
Use
"Pride of India"
MANUFACTURED IN INDIA
JUTE BAGGING

GUARANTEED NEW 2 LB. 21 LB. TARE
ASSURING BAGGING STRENGTH
AND DURABILITY

C. G. Trading Corporation
122 EAST 42nd ST. • NEW YORK, N. Y.

Sales representatives throughout cotton producing districts.

Stocks Maintained in
Houston and Corpus Christi, Texas; Charleston, South Carolina



"Le Roi *service and parts at any hour as close as my telephone!*"

This Texas ginner's enthusiasm for Le Roi is shared by many other ginners.

In every cotton-producing area, Le Roi provides Johnny-on-the-spot service — expert service — through a network of well-stocked, adequately-manned distributors.

That's one reason it pays to power your gins with Le Roi engines. There's another reason, also — a Le Roi is designed for the specific power requirements of cotton-gin operation. And it's built by a company that specializes in the heavy-duty industrial engine field.

A Le Roi engine is so compactly designed that it takes less floor space than other engines of similar horsepower rating. Yet, it has the weight and stamina to operate dependably.

In the Le Roi size range up to 450 hp, there's an engine powerful enough to meet all your requirements . . . and do it with low-cost fuels — natural gas, butane, or propane.

Get the complete Le Roi story of low power costs from your Le Roi distributor. Have him take you to inspect a Le Roi installation. See him soon.

F-42

LE ROI *Division of Westinghouse Air Brake Co.*

Milwaukee 14, Wisconsin

Cotton-Industry Headquarters: Tulsa, Okla.

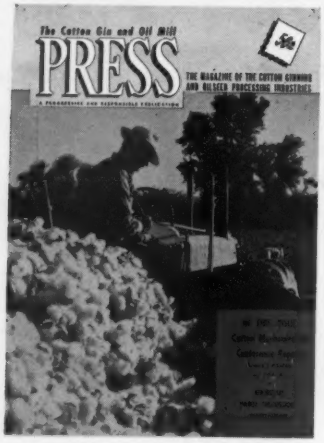
PORTABLE AIR COMPRESSORS

TRACTAIR

STATIONARY AIR COMPRESSORS

AIR TOOLS

ENGINES



★ ON OUR COVER:

Mechanical stripping of cotton, pictured on our cover, received major attention at the ninth annual Beltwide Cotton Mechanization Conference, which is reported in this issue. The harvesting of cotton by machines has come a long way since the first crude "sleds" stripped cotton from the stalks in western Texas and Oklahoma some 30 years ago; and one of the factors in this progress has been the annual conferences which have been sponsored by the National Cotton Council and cooperating organizations to work out the problems and point up the opportunities in mechanization.

Photograph by Bob Taylor

VOL. 56 SEPT. 24, 1955 NO. 20

The Cotton Gin and Oil Mill PRESS...

READ BY COTTON GINNERS, COTTONSEED CRUSHERS AND OTHER OILSEED PROCESSORS FROM CALIFORNIA TO THE CAROLINAS

★ ★ ★

OFFICIAL MAGAZINE OF:

National Cottonseed Products Association

National Cotton Ginners' Association

Alabama Cotton Ginners' Association

Arizona Ginners' Association

Arkansas-Missouri Ginners' Association

California Cotton Ginners' Association

The Carolinas Ginners' Association

Georgia Cotton Ginners' Association

Louisiana-Mississippi Cotton Ginners' Association

New Mexico Cotton Ginners' Association

Oklahoma Cotton Ginners' Association

Tennessee Cotton Ginners' Association

Texas Cotton Ginners' Association

★

THE COTTON GIN AND OIL MILL PRESS *is the Official Magazine of the foregoing associations for official communications and news releases, but the associations are in no way responsible for the editorial expressions or policies contained herein.*

PUBLISHED EVERY OTHER SATURDAY IN OUR OWN PRINTING PLANT AT 3116 COMMERCE STREET, DALLAS 26, TEXAS

OFFICERS AND EDITORIAL STAFF

RICHARD HAUGHTON
Chairman of the Board

DICK HAUGHTON, JR.
President and Advertising Manager

GEORGE H. TRAYLOR
Executive Vice-President and Secretary-Treasurer

IVAN J. CAMPBELL
Vice-President

B. P. RIDGWAY
Vice-President and General Superintendent

WALTER B. MOORE
Editor

PATRICIA SMITH
Editorial Assistant

WASHINGTON REPRESENTATIVE (EDITORIAL ONLY)

FRED BAILEY
744 Jackson Place, N.W.
Washington 6, D. C.

SUBSCRIPTION RATES:

Domestic: 1 year $3; 2 years $5; 3 years $7. Foreign: Latin-American countries $10; all others $15 per year. (Not accepted for "Iron Curtain" countries.) All subscriptions cash with order.

★ ★ ★

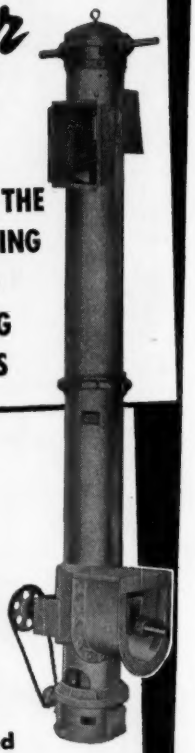
EXECUTIVE AND EDITORIAL OFFICES:

3116 COMMERCE STREET, DALLAS 26, TEXAS

A PROGRESSIVE AND RESPONSIBLE PUBLICATION

GENUINE SOUTHWESTERN

Rotor Lift



PREFERRED IN THE COTTON GINNING & OILSEED PROCESSING INDUSTRIES

THE VERTICAL HELICOID SCREW ELEVATOR

NINE BASIC TYPES

For Every Need

Such a marked preference for Rotor Life is natural. Replacing bucket elevators and other mechanical elevating units. Precision engineered to meet your needs and requirements in the elevating of any free flowing bulk material, the Rotor Lift will give you uninterrupted production and a continuous reduction in operating cost. Rotor Lift is available in nine distinct types and four diameter sizes. When processors in the cotton ginning and oilseed industries express such enthusiasm, it is well worth your investigation.

Send for our illustrated catalog describing the mechanical feature and specifications of the Rotor Lift.

SOUTHWESTERN SUPPLY AND MACHINE WORKS

6 S.E. 4th St. P.O. Box 1217

Oklahoma City, Oklahoma

When A Farmer Asks...

"What is the best seed treatment?"

Can you give him the facts?

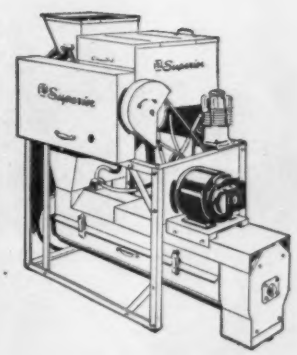
For the man who wants the best in seed treatment, there is but one answer . . . the modern PANOGEN PROCESS. Here's why:

FIRST, liquid PANOGEN is the only seed disinfectant containing *cyano (methylmercuri) guanidine.* Tests prove this a most effective mercury compound for controlling seed-borne diseases of cotton, wheat, oats, barley or sorghum.

SECOND, because this active ingredient is so effective, liquid PANOGEN can do its job with *less mercury.* This assures greater safety from germination injury.

THIRD, liquid PANOGEN'S powerful, fast-working vapor action penetrates every crack, pore and crevice in the seed. It even destroys diseases under the hull!

FOURTH, liquid PANOGEN helps control a wide variety of blights, boll rots, and other seed-borne and soil-borne diseases. Because it attaches itself tightly and permanently to the seed, it continues to give protection after planting. Experiment Station studies show that PANOGEN-treated seed can be expected to come up faster, give better stands, produce higher yields and better quality.



FIFTH, because PANOGEN-treated seed is colored pink, (like this page) the planter can *see for himself* that each seed is treated.

SIXTH, PANOGEN is the *only* liquid seed disinfectant widely tested and recommended by agricultural colleges from coast to coast.

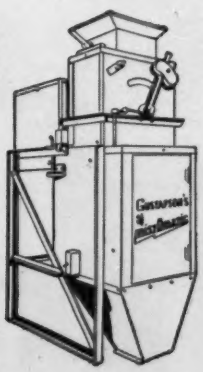
For more facts on the modern PANOGEN PROCESS or the name of your nearest PANOGEN Distributor, write William L. Warren, Southern Sales Supervisor, Panogen, Inc., Box 1014, Memphis, Tennessee.

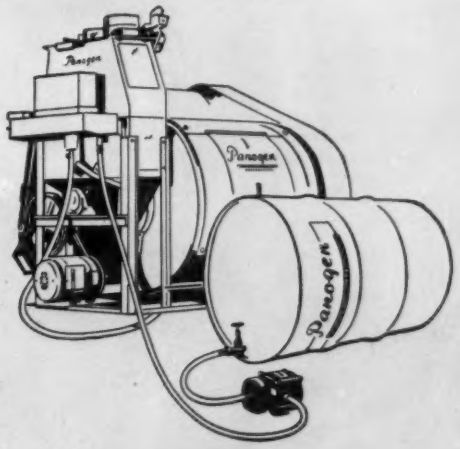
Panogen®

LIQUID SEED DISINFECTANT

A PRODUCT OF PANOGEN, INC. . . . RINGWOOD, ILLINOIS

PANOGEN . . . the no-dust liquid seed disinfectant for both fully automatic and slurry treaters.





PHILLIPS 66 SOLVENTS

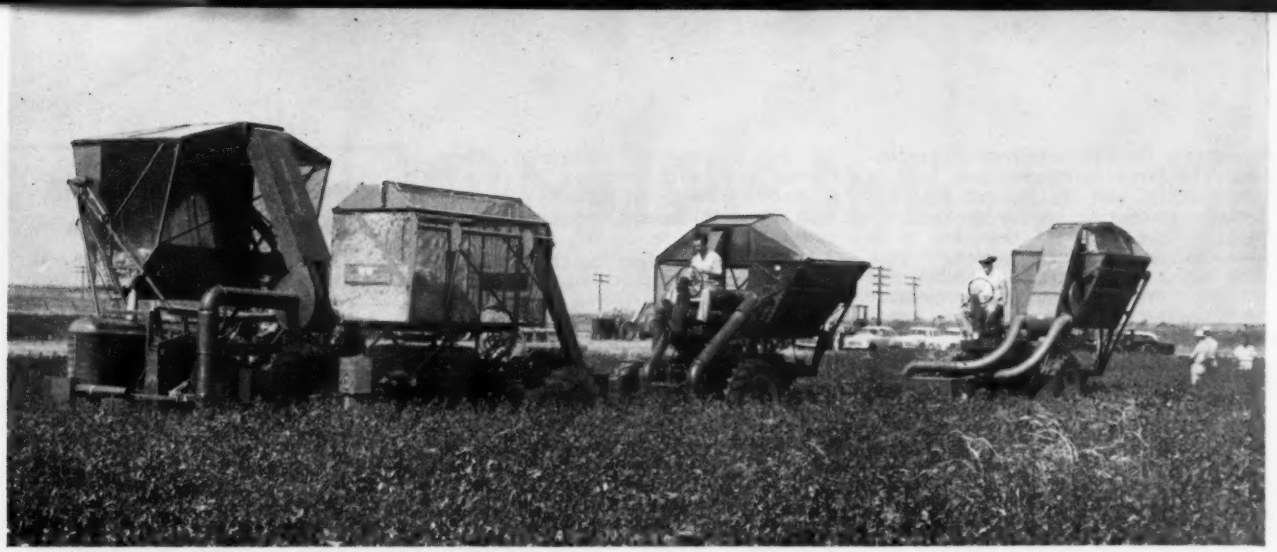
uniform quality makes extraction easier!

YOU KNOW what you're getting when you use uniform Phillips *66* Solvents. You can really depend on their narrow boiling range. No light ends, no heavy residues to complicate extraction operations. Phillips *66* Solvents are tested, checked and controlled all along the line to assure uniformity and purity.

YOU'RE SURE that Phillips *66* Solvents will arrive in excellent condition because special care is taken in storing, handling and shipping these high quality solvents.

YOU'RE WELCOME to avail yourself of Phillips expert technical advice on solvent problems. Phillips large-scale production and storage facilities provide Phillips customers with a dependable solvent supply at all times. Write for complete information.

PHILLIPS PETROLEUM COMPANY
Special Products Division
Bartlesville, Oklahoma



FOUR different makes of mechanical pickers enter a field at the demonstration at Temple Substation during the conference.

Proceeding of the

Ninth Annual Beltwide Cotton Mechanization Conference

ADDRESSES and panel discussions which were presented at the ninth annual Beltwide Cotton Mechanization Conference, sponsored by the National Cotton Council and cooperating organizations, follow. The conference was held Sept. 7-8-9 at Texas A. & M. College, College Station, with a tour and demonstration at Temple on the final day.

HELD Sept. 7-8-9 at College Station and Temple, Texas, the conference was sponsored by the National Cotton Council, with the cooperation of USDA, the Farm Equipment Institute, cotton states land-grant colleges, the host institution—Texas A. & M. College System—and others.

Facing the Challenges Of Mechanization

BY CLAUDE L. WELCH, Memphis, Director, National Cotton Council Division of Production and Marketing.

From the close of World War II, right on through the Korean emergency, the dominant and driving challenge to cotton mechanization was that of developing machines and ways of using them to offset the rapid increase in labor costs, and the steady shrinkage of the supply of labor available to cotton growers.

In more recent years, however, we have begun to accept goals—or challenges, if you please—of considerably more far-reaching implications.

We have seen emerging for several years now, a broadening understanding —a surer conviction—that the challenges of cotton mechanization go well beyond the immediate objective of employing machines "to take the place of labor."

To me, a meaningful distinction that is involved here turns on the idea of mechanization as a means toward **increasing the productiveness** of labor, rather than one of simply finding a substitute for it. And while the end result may very well amount to much the same thing, it nevertheless seems well that we get this concept—this broader point of view—identified as precisely as we can. And, of course, it includes more than the idea of increasing the productiveness of labor alone. What we're actually talking about is a more effective combination of all the resources used for cotton production, to make **the whole of them more productive.**

In looking at the present mechanization scene, we find that tractors have largely taken the place of work stock as the chief source of power. But production operations still involve a considerable amount of hand labor, and the largest part of the harvesting is still done by hand. This situation is broadly descriptive of the conditions under which about two-thirds of a "normal crop" is currently produced. And the average bale of cotton produced under these conditions represents something like 130 hours of labor.

Now, with prices in prospect, the value of a bale of cotton will hardly cover 130 hours of labor at the minimum wage level which so recently became the law of the land—even if one disregards the cost of operating a tractor and of fertilizer, planting seed, poison, and the like.

Let me say quickly that I'm **not** nominating cotton growers, or any other part of agriculture, for coverage under the minimum wage legislation. I'm simply trying to emphasize this point: Despite all the dramatic progress we have witnessed during the years covered by this series of conferences—despite the clear evidence of technological progress we can see all over the Belt—the great bulk of the cotton crop is still produced under circumstances that suggest something a great deal less than a comfortable position, income-wise, for those who produce it.

It is in this area, it seems to me, that we must confront the challenges of mechanization. And stripped of such abstract terms as "increased efficiency" or "greater productivity," the problems we are here to talk about seem sooner or later to sift down to the practical matter of **improving the profitableness** of cotton production. The character of some rather cold economic realities which our industry is facing suggests the importance—the urgency—of the subjects which make up this conference program.

In the market place, our competitors have established for us a ceiling on the price at which cotton can continue to be moved into consumption. It would call for something pretty extreme in the way of optimism to suggest that there is going to be any relaxation of this downward pressure on prices, as we look to the future.

And on the "underside," cotton, like any other enterprise, must face the need

Photographs of the demonstrations during the ninth annual Beltwide Cotton Mechanization Conference appear on Pages 32-33 of this issue.

to compete for the resources of production. The large carry-over now held in this country, and the present need for actually restricting production, make it easy to lose sight of this—but it is none-the-less real over the longer pull, that wages and returns to capital used in cotton production must also measure up to the test of competition, if we are to have a cotton industry.

In other words, the conditions for a healthy and progressive cotton industry must include attaining an income from cotton production that is comparable to the earnings of any other industry—within agriculture, or outside of it. And given a price structure that is geared to the realities of moving our production into consumption, the elements of this situation that are at least partially subject to the control of the industry itself fall into two general categories: Those having to do with reducing the costs of producing cotton, and those having to do with how much cotton we are to produce and sell.

Now I'm not suggesting that the term "cotton mechanization" has become so broad and so all-inclusive as to encompass everything that seems to be involved in reducing our production costs and in developing markets. But, I am suggesting that we seem to have reached a point where, if we are to fully capitalize on the potentials of mechanization, our efforts and our deliberations need to be bent specifically and vigorously in the direction of those basic objectives. We must develop a perspective which fits mechanization into the whole gamut of technology applicable to our problems.

We have spent nine years tracking down the broad possibilities for using machines to supplement and to multiply the effectiveness of labor used in this and in that cotton production operation. And this effort has been extremely productive. But the time seems at hand for us to begin bending our efforts more specifically toward the merging of these developments in mechanization with the ever-widening opportunities the biological and related sciences are opening up for us—and methodically to address ourselves to the business of forging out of the whole of this, **systems of cotton production** that can successfully measure up to the requirements of the competitive situation in which our industry finds itself.

By the term "system" I mean the whole sequence of operations that's involved in "making" a bale of cotton. And, I'm suggesting that somehow we must find ways of bringing an appropriate emphasis to bear on those elements of the problem that, in effect, are "choking down" the effectiveness of the production cycle—that this calls for all that the equipment engineers and the equipment industry can come up with, plus all that every branch of agricultural science can bring to bear on the matter.

Jerry Sayre, at the meeting in Little Rock last year, pointed out that in controlling weeds, a man with a hoe had a productivity equivalent to about 75 pounds of lint a day; that same man later in the season could harvest four or five bales a day with a one-row machine. It's the "hoe-level" output that tends to fix the ceiling as matters now stand.

Of course, weed control is probably correctly labeled our "number one" obstacle to cotton mechanization. But I suspect that we are going to find an answer to this one of these days; and that when we do, we are all too likely to find some different though lesser "obstacles" choking the cycle, limiting productivity, reducing efficiency, or whatever term you prefer.

Sometimes it seems that mechanization may even tend to be working at cross-purposes with other vital elements of our struggle to meet fiber competition. Take, for example, the matter of quality.

It would be a travesty indeed after all these years when the synthetic industry has been attempting to come up to the quality standards set by cotton, if **through default**, we were to hand over the initiative to our competitors in this matter.

On occasion, we have made quite a

(Continued on Page 16)

1955 Conference Will Be Held in Georgia

The University of Georgia, at Athens, is scheduled to be the host for the tenth annual Beltwide Cotton Mechanization Conference, it was announced at the conclusion of the 1955 meeting, which is reported in this issue. The first conference was at Greenville-Stoneville, Miss., where the 1950 meeting also was held. Others have been at Lubbock, Texas; Bennettsville, S.C.; Chickasha, Okla.; the San Joaquin Valley of California; Gadsden, Ala.; and Little Rock, Ark.

PHELPS

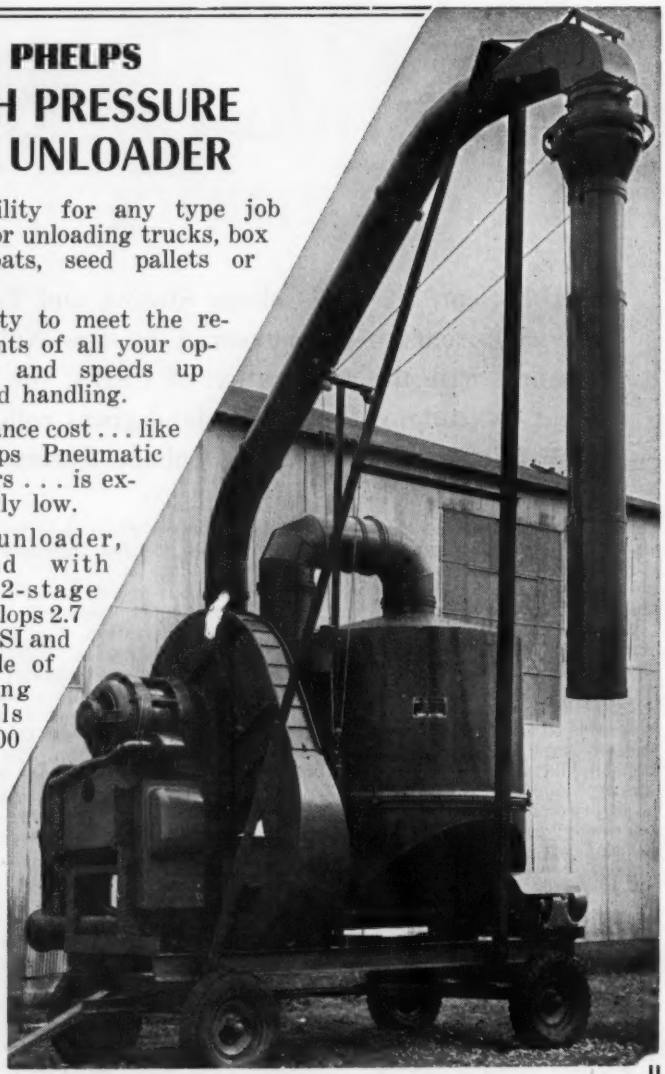
HIGH PRESSURE AIR UNLOADER

★ Adaptability for any type job loading or unloading trucks, box cars, boats, seed pallets or houses.

★ Versatility to meet the requirements of all your operations and speeds up your seed handling.

★ Maintenance cost . . . like all Phelps Pneumatic Unloaders . . . is exceptionally low.

★ This unloader, equipped with Phelps 2-stage fan, develops 2.7 pounds PSI and is capable of conveying materials up to 1,000 feet.



FREE ENGINEERING

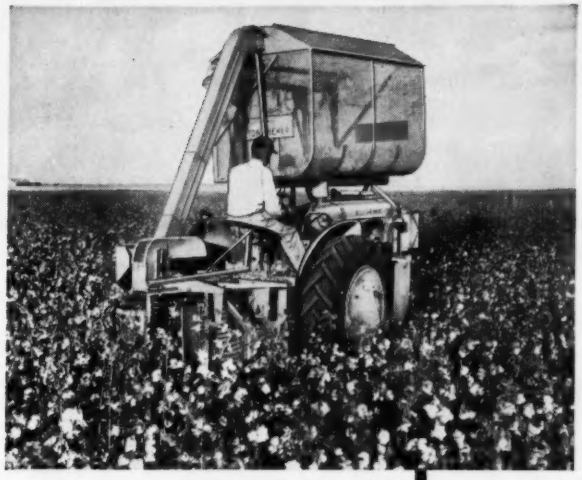
"The Pioneer of Air Unloading"

Hubert Phelps MACHINERY COMPANY

1700 EAST NINTH ST. – PHONE FRANKLIN 2-1314 – LITTLE ROCK, ARK.

Power Picking 1955 Style...

ONE-ROW MODEL



1. *Easy on... Easy off standard Allis-Chalmers Tractors*

2. *Higher grades*

3. *Priced to keep restricted acreages profitable*

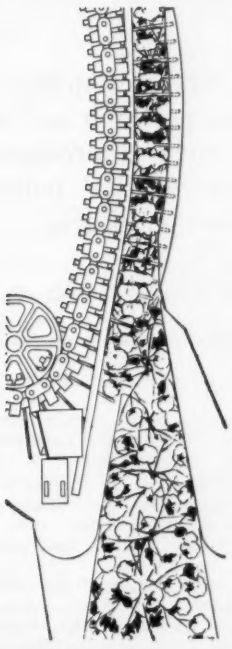
Cleaner cotton and higher grades at lower costs — that's the story of Allis-Chalmers Spindle-Type Pickers.

Begin with the spindles. There are more of them in the picking area. They are long, grooved and barbless . . . and reach completely through the plants. There's no raking or beating action. Result: highly efficient picking with less trash and leaves in the lint — less staining.

Another big grade-saving difference in the latest Allis-Chalmers Cotton Pickers — *no suction near ground level to gather dirt and trash.* A mechanical elevator moves the cotton up to the suction tube. Spindles *stop rotating* while the cotton is smoothly removed, without knotting. Cotton picked the Allis-Chalmers way gins better; brings a higher price.

Lower first cost and much lower maintenance mean big savings—savings you can pocket! An Allis-Chalmers Picker can help you *keep* cotton-growing profitable.

FARM EQUIPMENT DIVISION, MILWAUKEE 1, WISCONSIN



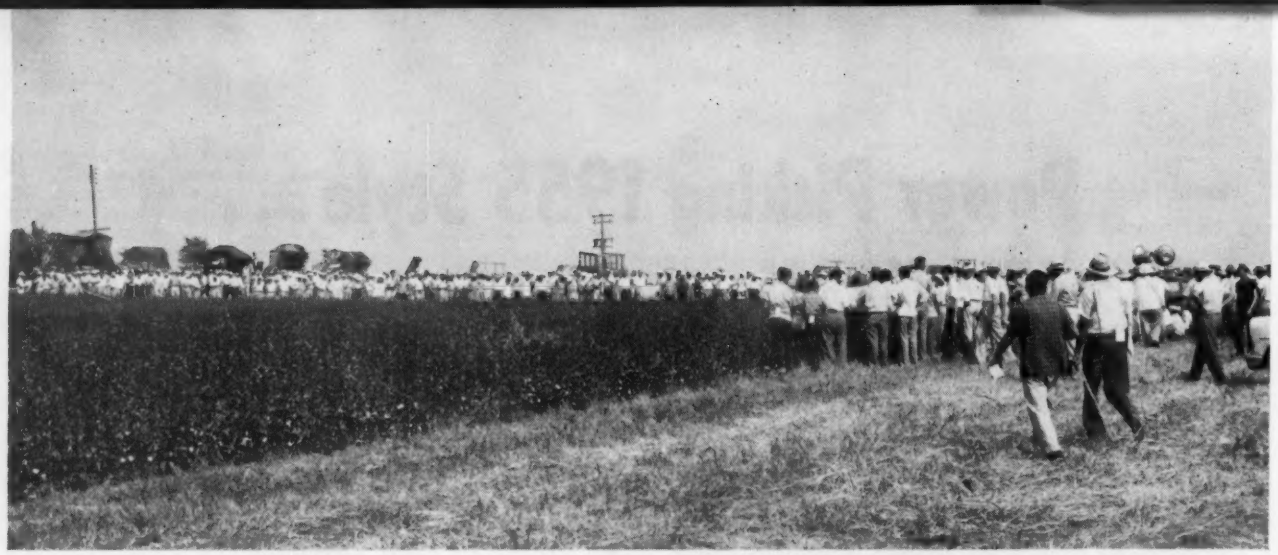
Sketch of an Allis-Chalmers picking unit in action. Notice that spindles reach all the way through the plant. This assures clean picking from side to side and bottom to top of the stalk.

TWO-ROW MODEL

The new 1955 Two-Row Allis-Chalmers Cotton Picker features one-man operation with new blower delivery to basket; improved slat and spindle assemblies; WD-45 POWER-CRATER engine. Big two-row capacity for large acreages at lowest first cost with less upkeep.

POWER-CRATER is an Allis-Chalmers trademark.

ALLIS-CHALMERS



PART of the crowd of almost 1,000 at the field demonstration Sept. 9 is shown here.

To Meet Competition

Mechanization Must Help Cotton Cut Costs and Improve Quality

LEADERS at conference agree that seriousness of cotton situation calls for increased research and educational efforts to increase efficiency of production, processing and marketing methods so that industry can enjoy greater opportunities in the future.

CONCERN with the economic situation faced by cotton underlined virtually every word spoken at the ninth annual Beltwide Cotton Mechanization Conference, Sept. 7-8-9 at College Station and Temple, Texas.

Speakers were unanimously serious—but not pessimistic—in their agreement on one idea. This was that mechanization must help to provide the improved quality and reduced cost that cotton has to have to meet today's challenge from synthetics and foreign growths.

Speaking for the National Cotton Council, which sponsors the conference in cooperation with many groups, Claude L. Welch said "The challenges of cotton mechanization go well beyond the immediate objective of employing machines 'to take the place of labor'."

Stripped of abstract terms, said the director of the Council's Division of Production and Marketing, "the problems we are here to talk about seem to sift down to the practical matter of improving the profitableness of cotton. The character of some rather cold economic realities which our industry is facing suggests the importance—the urgency—of the subjects which make up this program."

• **Surplus and Synthetics**—Low-quality—U.S. cotton piling up in government hands, while synthetics, foreign raw cotton and foreign textiles are consumed, was a reality emphasized by several speakers.

Cotton meets its competition head-on at the mill door, Robert C. Jackson of the American Cotton Manufacturers' Institute warned; and one of cotton's major responsibilities is to keep the mill man sold on the fiber and its future.

The manufacturers' spokesman reviewed the competition from synthetics, foreign textile compeition and the influence of U.S. governmental policies. Saying that he always has been and is optimistic, Jackson cautioned that the situation is serious and that the industry must decide which course to follow:

"On the one hand, there is opportunity unlimited—for the breeder, the farmer, the ginner, the machinery manufacturer and for every other interest having to do with cotton. On the other hand, there is absolutely certain disintegration of the cotton industry as we know it today."

• **The Quality Problem**—Improving cotton quality, one of the fundamentals of meeting competition, involves many different factors and phases of the industry.

It is partly a problem of better machines, and a representative of farm equipment industry, Irving A. Duffy of Ford Motor Co., pledged the full cooperation of that group in the teamwork necessary to improve the machines used to produce and harvest cotton.

Improvement is, to an even greater extent, a matter of men and methods; and this fact received much emphasis in the discussions at the 1955 conference.

A thoughtful analysis of the quality problem as related to government loan policies and stripper harvesting practices was made by Dr. Earl E. Berkley, director of Anderson, Clayton & Co. Fiber and Spinning Laboratory.

He showed how unbalanced support prices are discouraging the use of short and low-quality cotton coming from the stripper-harvesting areas of the Southwest.

"Should the standards for grade and staple and the loan prices all be modified to include fiber quality, as measured in the laboratory, it is possible that cotton mills could regain some of their markets and we would have much greater security for the future," he concluded.

"It is a question of whether we still have the pioneer spirit to the extent that we are willing to clear new ground in order to have a more fertile field of endeavor."

J. Ritchie Smith of the National Cotton Council and S. P. Lyle of USDA were among those who touched on the efforts of many organizations to improve the human element in cotton mechanization and to preserve the built-in quality of cotton.

Among these activities, all of which have been the subject of previous articles in The Cotton Gin and Oil Mill Press and are discussed in more detail in this issue, are the following:

1. Schools for mechanical picker operators which have reached many this season and are expected to reach more persons in the future.

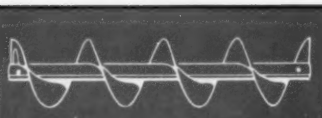
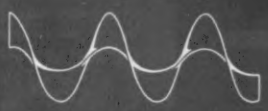
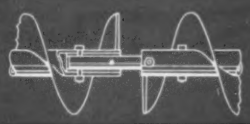
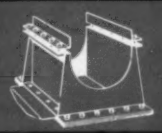
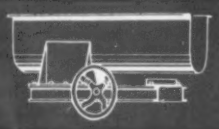
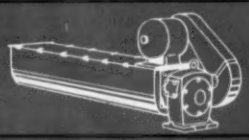
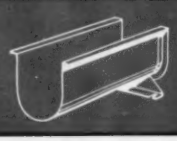
2. Grouping of seed cotton at the gin in order to assure proper ginning of loads harvested by different methods.

3. Preventing contamination in the harvesting, processing and handling of

By WALTER B. MOORE
Editor, The Cotton Gin and Oil Mill Press

When you buy screw conveyors... rate them against this quality chart

Only LINK-BELT gives you all these performance extras

ACCURATELY FORMED FLIGHTING		Link-Belt's specialized machinery assures accurate forming, producing uniformity of flighting curvature.
UNIFORM DIAMETERS		Only specially selected steels are used to meet Link-Belt's rigid specifications.
WIDE RANGE OF HANGERS		Hangers are available in a wide range of styles and mountings with various bearing materials.
EASY ASSEMBLY		Straightness is checked before shipping, and extra care is taken in handling and loading. Jig-drilled coupling bolt holes facilitate assembly.
ON-THE-JOB DISCHARGE OPENING LOCATION		For versatility in locating discharge openings, Link-Belt offers spouts and gates that can be easily installed on the job and bolted or welded in place.
CHOICE OF SPOUTS, GATES		Wide range of fixed or detachable plain discharge spouts or gates. Flat or curved slide type gates can be hand or rack-and-pinion operated.
FULLY INTEGRATED DRIVES		Only Link-Belt builds a complete, pre-integrated line of gear and chain drives, couplings, bearings. One proved source . . . one undivided responsibility.
ACCURATELY FABRICATED TROUGHS		Added refinements of manufacture assure better fit of all components. And Link-Belt offers you a choice of metals to fit your particular application.

These are only a few of the many important performance extras you get with Link-Belt screw conveyors. Ask your Link-Belt representative or authorized stock carrying distributor for 92-page Data Book 2289.

LINK-BELT

13,677

SCREW CONVEYORS

LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.

cotton by a wide variety of work on the farm, at the various steps in processing and in the different stages of storage and transportation.

4. Encouraging and developing precise measurement of cotton quality, through laboratory testing.

• **Ginners Praised** — The importance of ginning in the over-all problem of mechanization, quality preservation and cost reduction was brought out by Smith and Lyle and by other speakers. The reduction that has been made in rough preparation at the gin was mentioned often as an example of valuable contribution by ginners to the quality program.

Speaking for the gin machinery manufacturers, A. L. Vandergriff of Lummus Cotton Gin Co. praised ginners for the way in which they have met the changes resulting from mechanical harvesting. He added, however, that many gins which were considered adequately equipped five years ago must add more equipment to keep up with competition.

Recognizing the complexity of the problem of drying and cleaning and the complaints as to lint quality, Vandergriff said that the industry must frankly face this fact: Cotton which has been excessively dried and cleaned may bring the top market price, yet its value to the spinner may be less than if the drying and cleaning had been at a lower level.

He assured the industry that machinery manufacturers were working to improve equipment and to learn more about the problem, and suggested to spinners "If there is evidence that the cumulative effect of the drying, seed cotton cleaning, ginning and lint cleaning is resulting in a lower quality for you, let's find a quality measuring stick, set some limits and adjust the price accordingly."

• **Irrigation Can Help**—The part that irrigation is playing in reducing costs and increasing efficiency was ably brought out in the panel discussion of irrigation in the Rain Belt.

"Irrigation is not a practice for the inefficient," warned Dr. Grady B. Crowe of USDA, adding that studies in Mississippi clearly show the efficiency of the individual operator is far more of a factor in determining whether the practice pays, than the method of irrigation used.

Production depends more and more on management and labor skill, he continued; and the well-managed irrigation program can help to reduce the risk which has long tended to restrict change to other desirable practices, such as mechanization.

Irrigation is here to stay in the Rain Belt, Extension Director George B. Nutt of South Carolina told the conference; and Dr. J. R. Johnston of USDA's Soil and Water Conservation Research Branch outlined some of the problems and opportunities in that practice.

• **Production Practices** — The influence which various production practices exert on cotton costs and quality was duly stressed in the talks at the conference and during the two tours which were among the most interesting and important features of the annual meeting.

Spacing in planting cotton was discussed by H. F. Miller of USDA, while Dr. R. D. Lewis of the Texas Station talked on insect control.

Some of the things that public agencies are doing to aid mechanization and better production and marketing practices were reviewed by Assistant Secretary of Agriculture Erwin L. Peterson and Federal Extension Service Administrator C. M. Ferguson. Both stressed the importance of increasing income, and lowering costs, by increasing the productivity per man hour of labor.

• **Tours Show Developments** — The two tours made during the meeting were of wide interest to the representatives from all parts of the Cotton Belt, and a number of foreign countries, who were present.

On Thursday afternoon experimental equipment and work at the Texas A. & M. College cotton research facilities in the vicinity of the main campus were seen by the visitors.

Friday, the final day of the meeting, was devoted to a tour from College Station through the Blackland area to Temple Substation, where mechanical stripping, defoliation and other practices that had been discussed on the program were seen in demonstrations.

H. P. Smith, Texas A. & M. department of agricultural engineering, who had discussed stripper harvesting on the program, was in charge of the Thursday tour; and J. E. Roberts, Texas Experiment Station, handled the tour Friday. Demonstrations at Temple were under the direction of Dr. E. D. Cooke, agronomist at the Temple Substation.

• **Entertainment** — Entertainment features included a smorgasbord dinner on the first night and a banquet the following night. Burris C. Jackson, chairman of the Statewide Cotton Committee of

(Continued on Page 41)

Southwest

You Can Depend on

Southwest Sprayer & Chemical Co.

For Quality

☆ Agricultural Chemicals

☆ Yellow Devil Spray Machines

☆ Spraying Systems' Tee-Jet Nozzles

Southwest Sprayer and Chemical Co.

901 PEACH STREET P. O. BOX 487
WACO, TEXAS

WHEN YOU BUY AGRICULTURAL CHEMICALS

Coast to Coast
COTTON IS KING
SO IS HINDOO

OPEN WEAVE
Bagging
MAKES YOUR BALE
A BETTER BALE
2-LB. 21-LB
TARE

. . . the biggest selling bagging on the market

another dependable product from the mills of

Ludlow

BUY THE BEST . . .
BUY LUDLOW

MANUFACTURING & SALES CO.

P. O. BOX 101, NEEDHAM HEIGHTS 94, MASS.

MEMPHIS, TENN. ATLANTA, GA. GULFPORT, MISS. GALVESTON, TEXAS
LOS ANGELES, CALIF. SAN FRANCISCO, CALIF.

(Continued from Page 10)

point of the fact that through plant breeding, the character of cotton and the plant that bears it can, among other things, be modified to accommodate the design of machines for growing and harvesting it—a real advantage and one that should certainly be exploited to the fullest. We simply cannot afford to lose sight of the fact that the quality requirements of those who convert raw cotton into consumer products **are paramount** when they are in conflict with the technical aspects of using a machine more readily on the farms that grow it. Or to put it differently, the quality requirements involved in holding cotton's supremacy as a textile raw material must provide the framework—the limits—within which we consider manipulating genetic characteristics, and within which we can successfully substitute machines for human effort in growing and harvesting it.

Expansion of Research And Education

BY ERVIN L. PETERSON, Washington, Assistant Secretary of Agriculture, USDA.

It took 300 years to settle this country from ocean to ocean. The geographic frontier long ago disappeared. The new frontier is that of science and technology. Its horizon is vertical. It has no limitations. We have just begun to appreciate some of its potential.

The fact that this ninth Cotton Mechanization Conference is being held is testimony to the fact that we are in the new era of technology. I am sure you know more about cotton and the problems associated with it than I do. However, I am sure that cotton, a major crop with major problems, in some measure symbolizes most of the present day problems we face in agriculture.

If cotton, along with the rest of agriculture, is to depend upon quality products, aggressively merchandised on broadened markets, then producers must necessarily become better farmers. Merchandizers, too, must improve their techniques. At all steps, from production to consumption, we need to take the maximum advantage of the new technological age in which we live.

Real progress is made through greater knowledge put to use.

• **Farmer Must Be Businessman**—Now agriculture's main economic job is to produce, but since farmers are far more than just producers, their knowledge must be broader than production knowledge. Today the successful farmer is essentially a businessman. Like the businessman he uses capital in the form of land, machinery, livestock, buildings.

In this day of intensifying competition it is vital, therefore, that farmers understand the relationships among production, processing, marketing, merchandizing, and the general economic structure. At the same time, it is just as necessary that processors, marketers, merchandizers, and consumers learn more and understand more clearly the problems and responsibilities of economically sound agricultural production today.

We need to determine for example, what we expect from price supports. Is price support policy to be a means of maintaining the individual incomes of farmers at some predetermined level, or is it to be used as a means of facilitating the marketing of farm products? Economically it cannot be both, as the record should by now amply demonstrate. Either agriculture is going to develop competitive capacity through efficient production of quality products aggressively merchandized, or it is to become dependent on its political influence for its economic condition. The choice seems clear.

The penetration of the scientific frontier has brought forth new knowledge through research—knowledge widely disseminated which has given farmers an ability to produce which is unmatched in our history. This farming revolution has real meaning to people in cities too. For industry it means an ever-increasing supply of raw materials and an expanding market for industrial products used on farms. For consumers it means an abundant supply and variety of appetizing and nutritious foods available at all times regardless of season or locality.

An efficient, productive, economically sound agriculture is a major concern, therefore, of every one of us. Our very freedom to select our position in life would be hampered if our agriculture were not so efficient that a comparatively few people on farms can provide all of the food and fibers we need. In this respect our country is an exception in a world whose population in substantial part, is continuously hungry.

This productivity of agriculture, this efficiency of production, enables consumers to have continuously more and better foods without any increase in use of their spendable income to obtain it.

This is not an accident. It is the culmination of a tide that has been gathering force over many years—a tide of progressively better farming knowledge based on American ingenuity and inventiveness, nurtured by comprehensive and cooperative agriculture research spread far and wide by educational extension.

This movement, now assisted by various types of marketing services such as Crop Reporting, Market News Reporting, promotional efforts, and protective services like pest and disease control, has made possible this great abundance with which we are blessed.

We can choose to extend and take advantage of this technological revolution . . . of the penetration of the scientific frontier, or we can choose to ignore the economic lessons which seem so clear.

Farmers had been encouraged to believe a high price is the answer to all problems. Somewhere it was forgotten that price without market is of little meaning. The regulating value of price used without regard to market economics is in part responsible for the surpluses that have piled up, for acreage controls that have been made necessary, for the freezing of production into uneconomic patterns, for the loss of some of our foreign markets to foreign competition, and the loss of some of our domestic markets to synthetic competitors, for a lessening of quality of production, for a lessening of incentive to further explore the new frontier and to use the new knowledge which seeks greater and greater efficiency which provides means for becoming more and more competitive.

Farm productivity is like taffy—it's sticky. It doesn't easily change its shape. Our total economy, on the other hand, is vigorous, dynamic and rapidly changing to changing demands. The result is that agriculture has not kept pace with rapidly changing conditions. How could it when it was in a price strait-jacket. We must get agriculture back into gear with the high adaptability of our total economy.

Real progress is made through greater knowledge put to use. Agriculture must improve its efficiency and apply more successfully in the years ahead the fund of new knowledge coming from the developing technological r e v o l u t i o n. There are many services that government can and should render in this entire area.

Secretary Benson has spurred some real down-to-earth thinking among American farmers and the American people as to the important services of government in the area of farm science and technology.

Certainly Secretary Benson and others of us in this Administration are concerned about the problems facing agriculture. We are concerned about the level of farm income. We do not believe it is adequate. We are fully convinced that farmers are entitled to a greater share in the prosperity which our country is today enjoying. Our objective is to help farmers earn that share. And in working toward that objective, we have recognized the significance of the technological revolution.

You may be interested to know that fiscal year 1955 was the first time since 1940 that there had been an increase in agricultural research funds measured in terms of purchasing power of the dollar since 1940. A further increase was included in the 1956 budget.

The same is true for the Extension Service. At the same time, we are maintaining and improving our several marketing and protecting services used and needed by all of agriculture.

Our responsibility is to look squarely and honestly at the challenges standing in the way, and together to meet and conquer them. These challenges and problems take many shapes and forms. There is the problem of adjusting production to market potentials and expanding market outlets for farm commodi-

Conference Comments:

"This seems the time for us to . . . address ourselves to the business of developing . . . systems of cotton production that can measure up to the requirements of the competitive situation in which our industry finds itself."—CLAUDE L. WELCH, National Cotton Council, Memphis.

ties so as to enable farmers to share more widely in our developing prosperity.

There is the problem of wisely using our soil and water resources so as to assure ourselves of these resources for today and conserve them for tomorrow as well.

There is the problem of achieving wider application of scientific knowledge so as to reduce the present uneven distribution of the benefits of technology among areas and groups.

There is the problem of strengthening our capacity to acquire additional scientific information and our capacity to quickly disseminate it for use so that we have at all times available the technological know-how to produce efficiently for a growing population and on a basis that will improve the relative position of farmers as to productivity, labor efficiency, and income.

There is the problem of how agriculture may use its human resources to better advantage.

Now production patterns necessarily change slowly and production once increased is difficult to shrink. Many economic elements are involved. Then, too, the very technological advances that have benefited farmers so greatly also offer resistance to changing production patterns.

For this year, for example, we sought a 14 percent reduction in cotton production. The actual reduction now appears to be not more than 7 percent and possibly less. Acreage controls of themselves are not a fully effective means of achieving production limitations sufficient to compensate for markets lost through non-competitive pricing policies.

The cotton situation is aggrevated by the prospective size of the crop this year. This is not to imply that farmers should stop producing efficiently. Quite the contray. Steadily improving efficiency is vital to successful farming. It is necessary to be efficient in order to be competitive. Improved efficiency does not necessarily imply simultaneously improved production in the same degree. We need to learn how to produce the same amount at less cost and with less effort.

In the light of present circumstances with high inventories, we need to be realistic and fully aware of the economic implications when we reach conclusions about price supports, acreage allotments, marketing restrictions and other facets of agriculture policies.

Government will properly continue to play a large part in helping farmers make the adjustments necessary to sharing more widely in our developing prosperity.

• **Working To Sell Cotton** — This Administration is concerned with the cotton situation, as it is with all agriculture, and it is doing everything it can to move cotton under existing programs. This includes authorizations to ship roughly 600,000 bales under the provisions of the Agricultural Trade Development Assistance Act of 1954, plus approximately 500,000 bales to the operations of the International Cooperation Administration and other special programs.

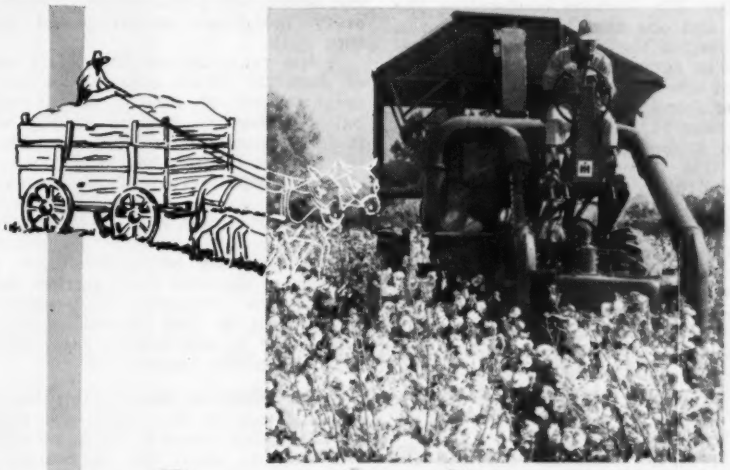
Three weeks ago Secretary Benson announced an interim plan designed to help reduce through special sales some of the overhanging stocks of lower quality cottons. Up to a million bales of Commodity Credit Corporation stocks of lower quality may be offered for export sale on open competitive basis at such times and in such quantities as will avoid material interference with regular marketing programs.

We seek the broadest attainable markets and the highest attainable incomes for our producers. But all of us, I am sure, are agreed the way to build markets for long pull at home, as well as in world trade, is through aggressive competitive selling of quality products, efficiently produced.

We want wider markets for finished products, through finding new uses by adapting the highly adaptable cotton fiber to these new uses. Here again, research plays an important part in market development, for most new uses for farm as well as other products has come through utilization research.

I say again that our real progress in agriculture lies in further penetration of the vertical frontier of science and technology which leads to lessening the costs of production, distribution, of processing, of merchandizing, and holds the best hope for a broader sharing in our growing prosperity. This is not the only area, however, to which we need to give continuing and increasing attention.

There has been no essential increase in our total cropland acreage for the past 35 years. Practical opportunities to bring new lands into production are becoming progressively less. Our popu-



There's a Big Change in

COTTON, too!

The tremendous stride of industry in modernizing farming methods has a counterpart. The science of Cotton Breeding at Stoneville has kept pace. New plant characteristics, increased yield and decreased waste recorded by Stoneville cottons year after year go hand-in-hand with the improvements in mechanization. The increasing demand for these famous strains is unquestionable proof that Stoneville has met the challenge of developing cottons for today's needs.

BREEDING

Makes the Difference

Stoneville 3202

Through the same scientific principles used in cattle breeding, scientists at Stoneville have developed the best cotton for each specific need and territory. Delfos 9169 with its long staple and Stoneville 3202, famed for early maturity, are both being acclaimed for their adaptability to the exacting demands of mechanization.

Stoneville Pedigreed Seed Co., Inc.
STONEVILLE, MISSISSIPPI

HOME OF "THE OLD RELIABLE"—STONEVILLE 2-B

lation is now estimated to reach an upper limit of 225 million people by 1975. This means that we must give real attention to the matter of conserving our soil and water resources.

I regard conservation as the wise, intelligent use of our resources to provide the materials needed by a growing economy, while at the same time preserving and enhancing the capacity of these resources to continue producing such materials now and in the future. The problem is to couple resource management with production economics and be competitive with the rest of the economy at the same time.

Unless we maintain the productive capacity of our natural resources, all our search for efficiency, all our efforts at penetration of the new frontier of science is of little value.

Another big problem confronting the nation, and one that has existed for a long time, is the waste of human resources in agriculture. The 1950 census reported one and one-third million farm operator families to have total incomes of less than $1,000 a year. The existence of such a condition in our agriculture makes this beyond doubt one of our great and difficult problems.

The Department of Agriculture has given this matter continuing attention. A report was published and transmitted by the President to the Congress to bring about more effective use of agricultural resources, especially by farmers of this income bracket. The recommendations are broad. They include the use of research, extension, technical aids, credit, vocational training for farm and off farm jobs, and information to bring jobs and workers together.

The program calls for starting the work in 50 counties. This can be a program of vital importance to agriculture and the whole country. People represented in this group need help to find broadening opportunities for remunerative employment, both within and out of agriculture. Unfortunately this program will be unduly delayed because the recent Congress did not see fit to provide the modest appropriations requested to begin its implementation.

Now, finally, if our agriculture is to develop further its dynamic qualities and achieve adaptability, it is imperative that the whole nation maintain a high degree of economic activity. A smooth functioning economy means more and better jobs for workers, larger and more stable returns for industry, more favorable income for agriculture, better quality and more abundant supplies for consumers. In short, a higher standard of living, greater security and a more rewarding life for all of us.

One of the major objectives of this Administration is to foster this kind of an economy and to do so in a world of peace. The industrial revolution in America is not over. In fact, it daily becomes more dramatic. Total national production has been projected at 500 billion dollars by 1965. On the basis of present information it appears reasonable to project that agriculture will share in this prosperity to the extent that its production can be balanced with markets and, even more important, to the extent that agriculture continues to apply science and technology and sound judgment to its production and merchandizing, and to the extent policies for agriculture are based on fact and good sense.

Cotton's Competition At the Mill Door

BY ROBERT C. JACKSON, Washington, Executive Vice-President, American Cotton Manufacturers' Institute.

Today the cotton industry of the U.S. faces opportunities, the like of which it didn't even dream about a few years ago. With the over-all level of the American economy reaching new heights almost every year, with standards of living and consumer purchasing power reaching out and beyond any heretofore considered limitations—and with the combination of all these influences multiplied by staggering population increases that grow larger each day—the demand for any product such as clothing, which is a primary requirement for every individual—seems almost limitless.

A few years ago we thought in terms of domestic cotton consumption in the neighborhood of six or seven million bales; today we become uneasy when it falls below nine million. Experts on the subject tell us that total fiber consumption will increase from its present 6.5 billion pounds to 8.5 billion pounds 10 years from now, and 11 billion pounds by 1975.

If cotton can retain the same percentage of the total fiber market that it enjoys now — roughly 70 percent — it means that by 1965 domestic consumption would be 12.5 million bales, and by 1975, 15 million bales.

• **Other Side to Story** — But there is another side to the story, one that is very sobering. Some of the same experts who tell us about the phenominal increases in fiber consumption which lie ahead also tell us that cotton isn't likely to retain its present 70 percent of the total fiber market. The question that you as cotton people want answered is "Why?" Is it predetermined that cotton must lose its present position?

An important part of the answer revolves around one of the most significant happenings in the long history of the fiber industry—the development of synthetics.

In years past there were sharp lines drawn between manufacturers of various types of fiber—there were woolen mills, silk mills and cotton mills. Each was a separate and very distinct process. But along in the thirties synthetic fiber—principally rayon—came into its own and was adapted to the so-called cotton system of spinning and weaving. A cotton mill could, with very little expense, change over from the manufacture of cotton to the manufacture of rayon.

In the years since, through the work of the companies which produce the synthetics, through the work of textile machinery manufacturers and the research laboratories, this whole process of synthetic fiber manufacture has been accelerated and improved upon. The result is that today a great number of cotton mills have learned, and have adapted their operations, to spin and weave synthetics.

The single-fiber mills are becoming fewer in number. During the past few years there has emerged the multi-fiber manufacturer, capable of handling cotton, rayon, dacron, acetate, nylon, orlon—and in many instances, wool.

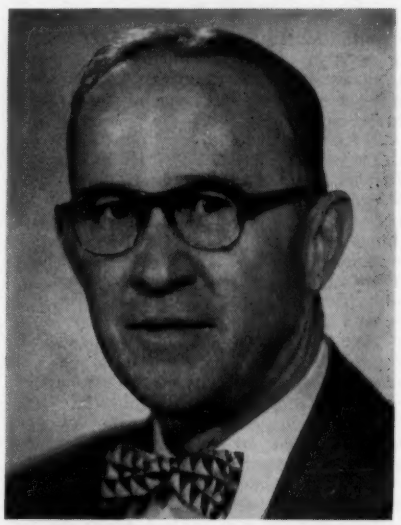
So it is that today cotton meets its competition head-on at the textile mill door. The mill man now has a choice of fiber. Oviously, he is going to make what the consumer wants. But it is very important to remember that the mill man, with his agents and contacts in all the markets of the world, with his stylers and designers, with his heavily financed advertising programs, with all his fabric marketing know-how, is tremendously influential in determining what the consumer wants.

• **Must Keep Mills Sold**—Thus today, in light of the competition between fibers, one of cotton's primary responsibilities is to keep the mill man sold on the fiber and its future, because if for any reason he shifts to a competitive fiber, then all his interest, his influence

Presenting

Tom Murray

Atlanta, Ga.



TOM MURRAY, Atlanta, Ga., was named executive vice-president of Georgia Cotton Ginners' Association in 1953. In 1954, he was appointed executive officer of the Alabama-Florida Cotton Ginners' Association, and elected executive vice-president at the annual meeting in February, 1955. The associations maintain joint offices in the Henry Grady Building in Atlanta.

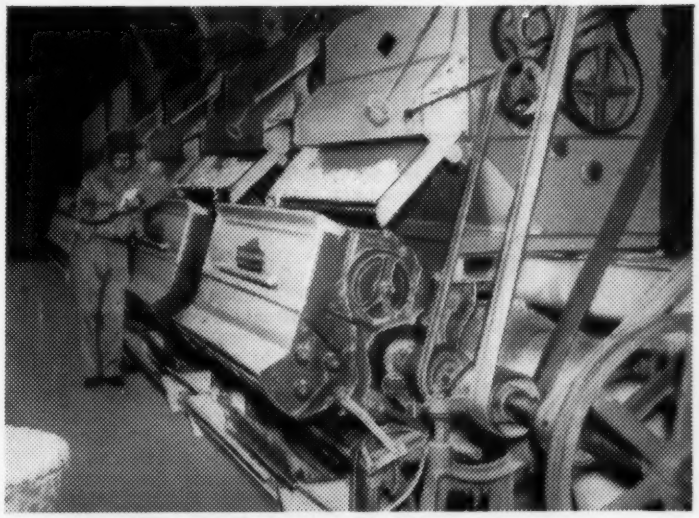
Both associations have more than doubled their membership since employing Murray. The first gin supply exhibit held in the Southwest was the result of work by Murray and Clifford H. Hardy, executive secretary of the Carolinas Ginners' Association, with the cooperation of officers of the three organizations. The success of the 1955 exhibit led to plans to continue the event next year.

Murray was born at Key West, Fla., but received most of his education in Illinois. For 10 years he was efficiency engineer for Montgomery Ward Co., working with their problem stores. He then established a chain of supermarkets in Texas, and later was in the Dallas Regional Office of OPS. He served as OPS district director for both the Dallas and Houston offices.

He and his wife, a former Texan, have their home in Atlanta and are members of the First Baptist Church.

THEY CUT FUEL COSTS 30% to 75% GIN, PUMP AND PLOW FASTER

since they switched to General Motors Diesel Power



Gins 20% faster—cut fuel costs 75%. This operator switched from a 4-cycle Diesel to GM 2-cycle Diesel power to run his cotton gins. He reports his GM Diesel starts easier, is more dependable. His fuel costs have dropped 75%, production is up 20%. He burns only 1½ gallons of 14.8¢ Diesel fuel per bale, produces 50 bales every 12 hours.

YOU'LL find that a good way to make your business grow is to switch to GM Diesel power for any job from 30 horsepower up.

When you do, you get an engine that does more work per day because a GM 2-cycle Diesel accelerates faster, responds to governor controls quicker than any 4-cycle Diesel or gasoline engine.

And thousands of owners tell us that a GM Diesel slashes fuel and maintenance costs, too.

Today you can get GM Diesel power in more than 750 different types of equipment built by over 150 manufacturers. Write direct for the list or get it from your local GM Diesel distributor.

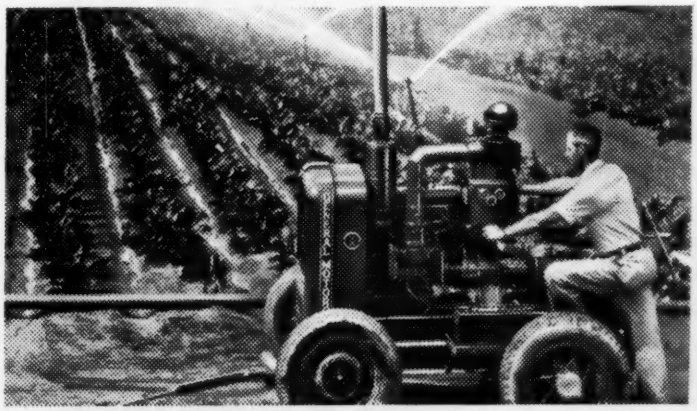
Detroit Diesel

ENGINE DIVISION

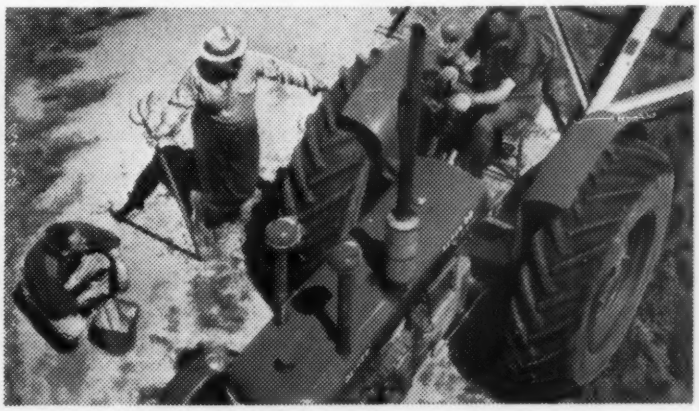
GENERAL MOTORS • DETROIT 28, MICHIGAN

GM GENERAL MOTORS DIESEL POWER

Single Engines ... 30 to 300 H.P. Multiple Units ... Up to 893 H.P.



Saves $1110 a season—pumps ⅓ more water. In three short seasons GM Diesel power will save this farmer the price of his pumping unit. He's already saved $1720 in fuel and $500 in maintenance in 2 seasons. He burns 2 gallons of 14.5¢ Diesel fuel an hour instead of 5 gallons of 23¢ gasoline. He's never spent a nickel for repairs and, although his 86-hp. GM Diesel replaced a 100-hp. gasoline engine, it pumps 150 more gallons a minute and serves 20 extra sprinkler heads.



Cut fuel costs 40%—has time for fishin'. This farmer traded in his gasoline tractor on a GM Diesel-powered Oliver Super 99 GM. Now he plows 25% faster and has cut fuel costs 40%. He says, "I traded because I wanted the best for my 400-acre farm . . . wanted to get my work done in a hurry. Now with that GM Diesel I've got a dependable, fast working tractor. And I get my work done ahead of schedule so I have time to go out and do a little fishing."

More Profit
FROM
Less Cotton Acreage!

FOR YOUR PROTECTION
READ the TAG
BEFORE YOU BUY!
1st Year from Mississippi Certified Breeder's Registered Seed
GROWN ON ONE VARIETY FARMS
GINNED ON ONE VARIETY GINS

Plant MISSISSIPPI CERTIFIED COTTONSEED for *High Yield* and *Top Quality*

When you plant Mississippi Certified Blue Tag Cottonseed you are sure it is **only one year from registered stock.** To guarantee you quality seed, every bushel of Mississippi Certified Cottonseed is **grown on one variety farms** and **ginned on one variety gins.** Each step from production to final labeling is under the supervision of qualified agronomists and competent inspectors. That's why Mississippi Certified Cottonseed is a premium cotton which will make you **more profit from less acres.**

This Emblem on the **BLUE TAG** *is Your Guarantee of Certified Cottonseed* **ONLY ONE YEAR** *from Breeders' Registered Seed.*

Place Your Order With Your Seed Dealer Today.

For a list of Seed Growers write:

MISSISSIPPI SEED IMPROVEMENT ASS'N.
(A.A.L.) STATE COLLEGE, MISSISSIPPI

in the markets, his resources of development and selling, his advertising—in other words, his business allegiance—is shifted to the opposition.

You may be sure that at this very moment some one or more mill men are giving careful consideration to the question of whether or not they should shift part or all their emphasis from cotton to synthetics.

What are the factors that these mill men are considering as they attempt to make their decision? What criteria are important to them?

Among the tangible factors are questions of price, quality, ease of handling during the manufacturing process, performance in the mill, quality and appearance of the finished product, and so on. Stated differently, these factors all add up to a basic consideration by the manufacturer of where his best chances lie to take a raw material—cotton, or rayon—transform it into a manufactured product, sell it, and on that operation earn a reasonable profit.

It is in this area of consideration where research and education really pay off for cotton. It is at this level of competition where all the cotton industry's efforts in the breeding of the seed, the improvements in fertilization, insect control, cultural procedures, ginning, handling, etc. begin to pay off, not just to the benefit of the individuals who follow improved techniques, but to the very future of cotton as well . In other words, it is in the areas of these tangible considerations of price, quality and performance where the subject of this mechanization conference takes on a significance extending far beyond the farm itself.

Here, today—whether you realize it or not—your considerations and the actions they generate, are having a direct influence on the ability of cotton to deal with its competition at its first point of contact—the textile mill door.

After the mill man has considered the tangible factors of price, quality, performance, etc., he moves to a second set of considerations which are just as important, though less tangible. In thinking of cotton, the manufacturer wants to feel that everyone from the farmer to the mill is conscious of his own responsibility to work as a member of a team to keep cotton strong, vital and alert to its opportunities.

He wants to feel that everyone connected with the industry—the farmer, the ginner, the handler, the machinery manufacturer, the scientist and the researcher—is genuinely interested in the maintenance of a healthy and dynamic cotton textile manufacturing industry in this country. Too often, the manufacturer feels, leaders among other segments of the industry—or officials in government—in an effort to deal with some temporary emergency are inclined to support policies or programs not in the best interest of the manufacturer.

• **Legislative Threat Hurts**—In this connection, one of cotton's great disadvantages—psychological and real — is its constant subjection to legislative and governmental action, or threats of action. Compare the uncertainty created for the manufacturer by this situation, as compared with the stability of rayon, and you see what I mean. By the adoption of long-range policies that are firm, practical both from the standpoint of the farmer and the manufacturer, and stable, the raw cotton segment of the

Conference Comments:

"The most important factor affecting labor requirements and costs, regardless of the source of irrigation water or application method, was the planning and management of the individual operator."—DR. GRADY B. CROWE, USDA, Stoneville, Miss.

industry can do much to overcome this great disadvantage that cotton is forced to endure as it strives to retain the confidence of the manufacturer.

Another factor, one that can be classified as both tangible and intangible, has bobbed its ugly head and unless it can be solved satisfactorily is going to defeat everything that all of us are attempting to do for this product that means so much. I refer to the trade policies of our government — nurtured and fostered by the State Department—which not only are permitting but actually are encouraging vastly increased imports into this country of cotton goods made by low-wage labor in Japan. Blindly following a policy that is completely unrealistic, unnecessary — and terribly unfair to the American farmer, to the textile worker and the manufacturer—our government today is driving the cotton manufacturer into a position where he has no alternative except to look with renewed interest at rayon and other synthetics. Much of his incentive to stay with cotton is being destroyed, and his confidence in its future is being taxed to the limit.

As some of you know, I have been an optimist with respect to cotton's future. From one part of this Belt to the other, in meetings with all sorts of groups, I have preached cotton and its future. And I have followed the same course with the textile mills. Today, in dead earnestness and all seriousness, I say to you that unless steps are taken in the immediate future to alter drastically the course of our present policy regarding imports of cotton goods and wearing apparel, the domestic cotton industry will be headed on a down-hill course with a momentum that cannot be checked.

One of the ironies of the present situation is that eventually it will be corrected. Every one of us in this room knows that if the time comes when scores of mills are closing their doors, when tens of thousands of textile workers are out of a job, when cotton consumption has declined drastically and the cotton farmers of the country look the dark future squarely in the face—when that time comes, the economies and the politics of the situation will force action. But what a tragic thing it will be if when our government is finally forced to make the necessary changes, we find that the horse is out of the barn, and cotton has suffered a permanent and irretrievable loss.

Somehow our government must be made to realize the extent to which it is jeopardizing the whole future of cotton in this country; the whole future of everything you in this Mechanization Conference are trying to do; the whole objective to which so many of us have dedicated ourselves for so long through the broad program of the National Cotton Council.

The cotton manufacturing industry cannot handle the job alone. It is for the raw cotton industry of this country to decide what course it chooses to follow. It seems pretty simple to most of us. On the one hand there is opportunity unlimited—for the breeder, the farmer, the ginner, the machinery manufacturer, and for every other interest having to do with cotton. On the other, there is in my opinion an absolutely certain disintegration of the cotton industry as we know it today.

Cotton's Future:

Program of the Farm Equipment Industry

BY IRVING A. DUFFY, Birmingham, Mich., Vice-President-General Manager, Ford Motor Co. Tractor and Implement Division.

Some of the popular journals have a picture of a cotton plantation somewhat akin to the most modern automation plant in the automative industry. Planning is done universally on a long term basis, latest research results are studied and applied, and modern machinery does the rest with speed, accuracy, and considerable pleasure and profit to all concerned!

This concept of a cotton plantation undoubtedly is picturesque, but you and I know that it is far from typical.

When we consider the typical cotton grower, we see that despite great strides toward mechanization, he and his family have not been assisted by machines to the same extent as other types of farming. Sixty percent of the farms in cotton growing areas still are not mechanized, still depend largely on animal power. Forty percent have tractors for some of the work, but they cannot be considered mechanized cotton farms.

Only seven percent of our cotton farms can be considered to be mechanized, equipped with machines for tillage, planting, cultivation and harvesting. And that seven percent compares with sixty percent of our cash grain farms that are mechanized from tillage through harvesting.

We have a long way to go before the typical cotton farm measures up to that picturesque plantation of plenty.

All of us on cotton's team must recognize that our progress largely depends on how effectively we stimulate and educate in the understanding and use of the improved materials, techniques, and equipment available today.

The farm equipment industry recognizes this and, consequently, individual farm machinery companies are continually training and teaching their dealers and their field representatives. This training and teaching are, of course, designed to make our dealers better able to recognize farmers' needs, and fill them properly, economically, and realistically.

An equipment dealer actually is selling machine tools of agriculture, some of which are complicated in design, and complicated in operation, too. Owners and operators must know the best way to run this equipment if they are to get their investment back in terms of time saved, drudgery eliminated, stands improved, and profit increased at harvest time.

It is our responsibility to see that farmers do get this help with their machinery, and I think our industry has made tremendous strides in this field.

In this connection, a recent agricultural opinion survey by the advisory council of the Farm Equipment Institute is of interest.

Farmers were asked a number of questions, including this one: "Where do you get information on farm equipment that is most useful?" The farmers surveyed listed farm equipment dealers among the prime sources of information, which also included the state colleges, farm magazines, and other channels of communication.

The farmers were then asked to rate their implement dealers on a number of points:

1. Condition and adjustment of new machines delivered to the farm. Seventy-five percent rated dealers satisfactory.
2. Instruction and assistance in starting new machines purchased. To this, 72 percent of the farmers responding rated their dealers as satisfactory. Sixty-five percent of the farmers said dealers had satisfactory repair parts when farmers needed them; 91 percent rated mechanical service by dealers as either good or fair.

It was quite interesting to me, too, that better than 93 percent of the farmers surveyed said that farm equipment makers were doing either a fair or good job in meeting the equipment needs of farmers.

I cite these results not to attempt to prove that the 5,500 farm equipment dealers serving the Cotton Belt with full sales and service facilities have reached a zenith of perfection, but to show that farmers do expect information and education from their dealers and that, by and large, most dealers recognize and meet their responsibility. It's evident, however, that there is considerable room for improvement on the part of our industry, especially in the two areas of improving dealer performance and encouraging farmers in the use of tools which could help lower production costs and increase efficiency.

• **Views of Leaders** — Recently we discussed this situation with Ed Wilborn of Progressive Farmer. I'd like to quote a paragraph of a very frank letter he wrote us concerning the leadership role of the farm equipment dealer. Wilborn wrote as follows:

"Dealerships are needed that are better equipped and have more thoroughly trained personnel. Many dealers don't know enough about the equipment they sell. Consequently, they don't do a good job of selling to the cotton farmer. Take the rotary cutter, for example. Every cotton farmer should be using one. Yet, most cotton stalks are still cut with a rolling type cutter . . . in the final analysis, it's the farm equipment dealer who must sell the farmer on the advantages of a machine and tell him how it will pay off on his particular farm. The rotary hoe is another machine that is being used far too little by cotton farmers . . . "

Wilborn, of course, is not alone in

his opinion as to the opportunity for more effective and more widespread use of present knowledge and equipment.

J. C. Futral, head of the department of agricultural engineering at the University of Georgia, has this to say: "Cotton growers are putting machinery to better use now than they have in the past. However, they could improve their maintenance, accuracy in tool setting, and laying off rows for precision planting."

George Nutt, Clemson College, comments as follows:

"Many cotton growers are using effective and economically the farm machinery available to them. It should be kept in mind, however, that the majority of our farmers changed from animal power and simple tools to tractor power and comparatively complicated tools in a very short period of time. The majority of them are not making the fullest use of equipment.

"They have not learned to rely on equipment from start to finish in their production and harvesting operations. Therefore, certain phases of their work have not improved over methods which were followed when animal power was relied on entirely. I think the problem in this area is one of education which becomes the responsibility of the manufacturer, the dealer, the land-grant colleges, and all concerned."

Note the order of responsibility that Nutt uses—the manufacturer, the dealer, the land-grant colleges.

T. E. Corley, associate agricultural engineer at Auburn, also believes that "Most of our cotton growers are not using effectively and economically the farm machinery now available to them."

He points out, too—and very accurately in my opinion—that "Choosing the correct size of tractor and/or implements contributes to the economical use of farm machinery. Many cotton growers have farm machinery that is too large or too small for economical use for their size of operation."

E. W. Schroeder, head of the agricultural engineering department at Oklahoma A. & M., agrees with the foregoing comments. In addition, he points to a project under Professor Garton at the Altus Irrigation Station. Approximately 80 acres of irrigated cotton were harvested in the following manner: One-third was hand-harvested twice; one-third was hand-harvested once and machine-harvested once; one-third was once-over harvested with a cotton stripper. And, quoting Schroeder, "Our net return was $30 per acre better when we harvested with machine only."

Parenthetically, I would like to say that the cotton grower who is **not** using mechanical harvesting solely, because of loss of grade probably has not taken a good look at the economics of the business, as they have been pointed out by Professor Schroeder.

Frankly, I am **not** concerned over the ability of the farm equipment industry to keep abreast of cotton's needs for the design and manufacture of constantly improved equipment. Excellent equipment is coming out of our plants today, and even greater equipment is in the design and test stages. Research, engineering, and manufacturing of ever-improved equipment is a matter of self interest.

• **Industry Must Help Educate** — My major concern is that the farm equipment industry recognize its role as an educator. The finest machines, the most effective techniques, are worthless until they are put to use by the farmer. And, again, we are setting our sights on the typical farmer, not merely the big grower.

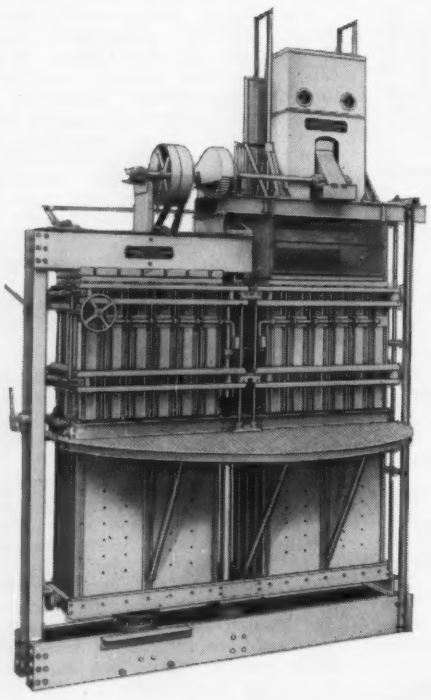
We must train dealers to become worthy of the all-important link which they are in the chain of agricultural information. We must equip them to carry the techniques for proper operation of equipment to the growers who can put them to work.

In short, gentlemen, farm equipment dealers must be **agricultural equipment sales engineers.** They must know their customers problems as intimately as their own—because they are their own. And the dealer must be competent to place the entire resources and know-how of the industry he represents at

Your Cotton Council Pays Off

The fiber that rules the market for dresses, blouses, and skirts holds a psychological advantage in competition for all apparel and household uses. Cotton is in this enviable position, thanks to research promotion sparked by continuing Council campaigns.

Support Your National Cotton Council



EVERY GIN SHOULD HAVE A DEPENDABLE PRESS

Avoid costly breakdowns at the press—install a heavy duty all steel Cen-Tennial Special Press and Tramper before this season begins.

The Cen-Tennial Press has these important features:

WELDED STEEL AUTOMATIC DOGS

SAFETY TRAMPER LOCKING DEVICE

WHEEL TYPE DOOR LOCKS

SIDE HINGED DOORS

Write for Bulletin 49-P

CEN-TENNIAL COTTON GIN CO.

DALLAS, TEXAS • COLUMBUS, GA. • MEMPHIS, TENN.

work solving the problems of his customers.

That, to me, is the real challenge we face. We, as an industry, must work closely with the colleges, the National Cotton Council, the Extension Service, and shoulder our share of this tremendously important task of carrying new doctrines to the farmer—and selling him on their advantages.

Now, if I may be permitted to leave my assigned subject for a moment, I would like to say this. The basic responsibility for agricultural education rests with the colleges, and especially the extension arm of the colleges. The fact is that we need more extension people. And I for one would urge that the present steps to strengthen extension's personnel be hastened and expanded.

And speaking of extension and its tremendous accomplishments, I do not think we should overlook the fact that the farm machinery industry continues to provide substantial financial and other support to programs and organizations designed to teach the best practices to the youngsters will be the farmers of tomorrow.

In the cotton producing states, more than a million boys and girls are enrolled in 4-H Club work, a great share of which results in an improved agriculture, as well as better citizens. Four major farm machinery companies contribute approximately $300,000 to this activity each year.

In addition, more than 200,000 Future Farmers, and New Farmers of America in the same states, receive guidance and stimulation and information.

Now, I would like to make one additional observation.

The inherent qualities of cotton, plus a well-directed, continuous and enthusiastic selling of these qualities have maintained for cotton its leader's role in the field of fiber. In my opinion, we have ahead of us a tremendous opportunity to insure your role of leadership. American markets are changing markets, and the ability not to follow trends but to make them in our markets gives one an enviable and profitable position.

That cotton can make trends is obvious from the past. That it will in the future rests with the Cotton South and the support it gives to cotton's research and merchandising programs.

Every once in a while you see charts or graphs by some expert whose nose and predictions invariably point downward.

I come from the automotive industry as well as from the farm machinery industry, and I would like to tell you that some of the best chart makers and trend predictors in the business are blushing these days at their last year's predictions of the 1955 car market.

They simply didn't give enough weight and consideration to two areas. First, the dynamic qualities of the American market, and second, the tremendous inventive and stimulative ability of the auto industry from designers to dealers.

My point is that cotton's future depends less on chart makers than it does on trend makers. You have the necessary organization. You have the quality product. You have the research to keep you out in front.

Cotton's Future:

USDA-Land Grant College Research Programs

BY DR. LOUIS E. HAWKINS, Stillwater, Director, Oklahoma Experiment Station.

My comments on the subject listed on your program will deal with but three basic points. First, cotton as a raw material must be grown and delivered to the spinner at lower net cost if cotton is to meet and beat competition with other fibers. Second, the quality of the cotton fiber must be improved and its physical characteristics must be more dependably standardized if cotton is to meet, and beat, competition with synthetic fibers. Third, cotton fibers must be made more versatile in usability, and their uses must be extended into more end products, if cotton is to compete successfully with rayon, nylon, orlon and the yet unborn new fibers which spawn from the fertile brain and fecund laboratory of American men of science and industry.

The research which has made the advancement of the synthetic fibers possible has been privately financed, in the main. Research dealing with the three basic points with cotton which I have listed has been and doubtless will continue to be financed largely by public funds. That is not to overlook nor discount the value of the substantial monetary support which the several segments of the cotton industry and various commercial firms put directly into research for improvement of cotton's bus-

Whether for Cotton, Pastures or any other Crop, You Know that

IRRIGATION IS INSURANCE!

★ PIERCE Irrigation Systems

- REYNOLDS Aluminum Pipe
- RAINBIRD Sprinklers
- NAYLOR Spiral Weld Steel Pipe
- GENERAL MOTORS Diesel Engines
- DEMING Turbine Pumps & Centrifugal Pumps
- CHRYSLER Gas Engines
- WISCONSIN Gas Engines
- RED SEAL CONTINENTAL Gas & L.P. Engines
- Complete Line of Well Supplies
- Complete Line of Pumps—High Lift or Low Lift
- WELLS — 4" to 18"

Home of the "Turn-Key Job"

LEWIS-DIESEL ENGINE COMPANY

92 W. Carolina, Memphis, Tenn., Phone 5-6447 • 3021 E. Broadway, N. Little Rock, Ark., Phone Windsor 5-2321

iness. No other large farm commodity group has gone to bat so vigorously and effectively to support research for the improvement of its product as has the cotton group.

If cotton's future competitive strength lies in research, and of that I am firmly convinced, then the future of the cotton industry rests in no small measure with the public agencies which are conducting that research. May I hasten to add, however, that these same public agencies are motivated and guided, in the case of this commodity, by the interests of the several elements of the cotton industry and by the users of the end product. The quantity of funds made available for this work is the sensitive control on the nature and volume of the research that is undertaken.

• **Research to Reduce Costs** — Now let's look briefly at the research programs of these agencies against the three basic factors of competition listed a moment ago. The following things are being done researchwise relative to growing and delivering cotton to the spinner at lower net cost:

1. Varieties are being improved for larger yield per acre, resistance to disease and adaptation to mechanical harvesters.

2. Basic needs and characteristics of field machines for seedbed preparation, planting, weed control, application of chemicals, harvesting and stalk shredding are being determined.

3. Extensive research is directed at more effective control of harmful insects and destructive diseases.

4. Soil management, use of fertilizers and more effective integration of cotton growing with other aspects of farming are receiving much emphasis in present research.

5. Ginning techniques and processing equipment are being improved for removing the fiber from the seed, the trash from the lint and preserving the quality and character of the fiber.

6. The handling and transportation of the line from the gin to the mill, and of the seed from the gin to the oil mill, are being studied carefully in an effort to reduce costs in those phases of the industry.

• **Research to Improve Quality** — Now, take a look at what research is doing to improve the quality of the cotton fiber, and to standardize the product of the field and gin as it is delivered to the mill:

1. Basic improvement in the physical characteristics of the fiber itself is accomplished through plant breeding.

2. Careful studies have determined the importance and effects on the fiber of stage or degree of maturity at time of harvest, and of moisture and temperature when processed through the gin.

3. There is a growing recognition of the essential need to know what is in the bale; for the mill buyer to know what he is getting, and for the seller to be able to deliver the kinds the buyer wants in quantity lots as may be desired.

While in the main an item of marketing, this area of study points up the indispensable close association of marketing with production research. Varieties having widely differing physical characteristics should not be mixed in the bale nor even in the gin. Likewise, other major factors of grade such as color and trashiness should be held as constant as possible within a market lot, to facilitate standardization for the buyer.

Cotton has a good way to go yet in this matter of standardization of quality, market grade and uniformity within a bale and lot.

• **Research to Aid Consumption** — The third broad category of research, consistent with our third basic factor in strengthening cotton's competitive position, is that which will increase the versatility of the fiber and extend its end product uses.

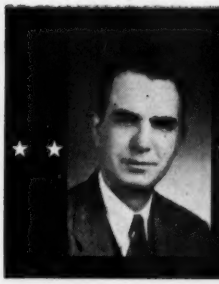
Great variation in physical characteristics of the cotton fiber exist now among the several varietites, in the several producing areas and under the varied weather and climatic conditions. Further variation can be induced through genetic research and use of selective growing conditions. When these several influences are utilized in a controlled way to produce made-to-order fibers for specific end uses, we will see the outlets for cotton increased in number and extended in volume.

A vast amount of research is underway now to improve and extend the uses of cotton. The Southern Utilization Branch of the Agricultural Research Service has a very large program in this field of work. The state stations have a few projects in this area, some independently and some in cooperation with USDA.

Since necessity is the mother of invention, it is just possible that a greatly

(Continued on Page 34)

D.&P.L.CO.
ORIGINATOR OF
DELTAPINE PLANTING SEED
TRADE MARK
Medium-Early Maturing • Heavy Yielding
• High Lint Percent (38% to 40%)
• Easy Picking—Hand or Machine
• 1-1/16 to 1⅛ Inch Staple.
Breeder's Registered
DELTAPINE 15
Breeder's Registered
D&PL-FOX
Fast Fruiting • Early Maturing
• Excellent for Machine Harvesting
• Moderately-High Lint Percent (34% to 38%) • 1-1/16 to 1-3/32 Inch Staple.
Leads them all year after year!
More than *one-third* of the entire U. S. cotton acreage is planted to Deltapine Cottons year after year. Place your order for Breeder's Registered Seed, now. Write, wire or phone Sales Department.
We have a moderate amount of Breeder's Registered Seed of a new 1⅛-inch strain Deltapine, Deltapine Staple. LEADS THEM ALL YEAR AFTER YEAR!
DELTA & PINE LAND CO.
SCOTT, MISSISSIPPI
Breeders of the Belt's Best Cottons



from our Washington Bureau

by FRED BAILEY

WASHINGTON REPRESENTATIVE

The COTTON GIN and OIL MILL PRESS

• **Cotton Major Issue**—Government cotton programs are beginning to rise to the surface as one of the major issues in the increasingly hot political campaign involving farm issues. Administration farm officials see cotton as their No. 1 farm worry for next year.

Secretary Benson is in a tight box. He is squeezed between continued high production, plus mounting supplies, and the failure of other government agencies to cooperate on an expanded export program. The farm law offers him little opportunity to escape from that dilemma.

The law says that he may not establish acreage allotments intended to produce a crop of under 10 million bales. In establishing that allotment he has no choice but to use past average yields per acre.

Using those averages he established an allotment total of 18.1 million acres this year. However, factors beyond the control of the Secretary promise to result in a crop of approximately 13 million bales. This is the result of a phenominal yield estimated by USDA at 374 pounds of lint cotton per acre.

This adds up to a total supply of 24 million bales, and a prospective 1956 carryover of 11.5 million bales. The immediate problems are (1) how to expand exports and (2) how to adjust 1956 production so as to reduce the carryover in 1957.

• **Export Outlook Dim**—About all that can be reported on the export outlook is that it is getting major attention, both from government agencies and private trade groups. The outlook, admittedly, is not promising. Benson recently conceded this on his return from Europe.

USDA reports tend to confirm this. Exports for the year ended last July 31 totalled 3,447,000 running bales, a decline of more than 300,000 bales from the previous year. At the start of the year USDA had confidently expected exports to total 4.5 million bales.

The export year, moreover, ended on a sour note. Exports for July amounted to only 59,000 bales, compared with 228,000 bales in the previous July. Unofficial tabulations since July indicate that cotton movement abroad has continued slow.

The official explanation for this is interesting, though hardly complete. The USDA says the decline "may be attributed to price uncertainties and the recent trend in cotton importing countries to hold stocks to minimum levels."

The fact that those uncertainties on price were due to foggy government policies on exports is no secret. Long before the end of the export year Benson hinted strongly at an export subsidy to start on August 1. That failed to develop, for reasons we have pointed out here in previous reports.

Nor have those uncertainties been cleared up since July. Benson announced that some low-grade cotton held by CCC would be offered for sale abroad on a bid basis. There are no official figures on how much has been sold, but admittedly the amount has not been large.

To further complicate the situation, Benson has hinted rather broadly that some sort of a new export program would be announced after January 1. The inference, naturally, is that cotton will be made more attractive to foreign imports then. Thus the current hand-to-mouth buying.

Public law 480, the Agricultural Trade Development Act of 1954, has not resulted in the hoped-for boost in exports. USDA reports that agreements signed with 19 countries this past year covered only 642,000 bales, at a price of $127 million.

• **Production Adjustment Stymied**—The second part of the cotton problem, that of bringing production into line with prospective requirements, is an equally tough one. Although no specific program for 1956 is expected until January or February, USDA plans must be ready far in advance.

Talking with ACP officials we get the impression that some further reduction in acreage will be called for. Talks at this point range from a 3 to 6 percent cut, or from 500,000 to a million acres off of the 1955 allotment.

This can be justified by using the more recent average of yields per acre, still aimed at growing the minimum 10 million bales set in the law. Our own guess is that any reduction will be under 5 percent for next year.

In developing a cotton program for next year, the Administration must keep two things in mind. First that 1956 is an election year and that any program which offends too many farmers could cost the Republicans votes. Second, the so-called cotton-bloc in Congress, is one of the most powerful on the Hill.

The Administration, if it is to keep its latest promise to come up with "something specific" in the way of farm legislation, will need the cooperation through promising a continuation of 90 percent of parity supports.

Efforts to find out what Benson has in mind when he says "something specific" will be done to halt the decline in farm prices and income have met with no success so far. The obvious conclusion is that he does not yet have anything specific in mind.

All sorts of proposals are floating around, the most likely sounding of which is the soil bank idea that has been kicking around Washington for the last 20 years. Under that the Department could do one of two things: It could lease the land to be taken out of surplus crops and require that it be used for soil-building purposes; or it could make direct payments on diverted acres not planted in crops for sale.

• **A Political Battleground**—There is no assurance that Benson will be around when the time comes to put a program before Congress. Every Secretary survives a flock of resignation rumors and there is no reason now to believe that Benson will succumb, but demands from influential sources for him to quit have begun to worry White House and GOP party officials.

There can no longer be any question but that the farm situation is becoming deeply involved in partisan politics. Both sides already have reached the name-calling stage, and both seem more intent on fixing the blame on the other than on offering any constructive suggestions for improving the situation.

It may be significant that Vice President Nixon, rather than Benson, has been named the official Administration spokesman, politically, on farm issues. It is no secret that it is a job that was wished on Nixon by the Republican National Committee. Nixon personally is said to have little confidence that the flexible price program will raise farm prices or income.

Perhaps the most unfortunate aspect of the situation is that the farm issues are becoming so indistinguishable from politcal campaign issues that neither party will be willing in the next Congress to quit fighting long enough to do something about the price situation.

• Lummus To Open New Office at Fresno

PLANS for new offices and warehouse facilities at Fresno to serve customers of Lummus Cotton Gin Co. in California, Arizona and the Mexicali area of Mexico have been announced at the firm's headquarters in Columbus, Ga., by Harold C. Lummus, vice-president and secretary.

Clifford Granberry has been appointed district sales manager with headquarters in the new Fresno offices, at the corner of Fulton and San Benito streets. Granberry, who has been assistant manager at the firm's offices in Dallas, is widely known throughout the ginning industry. Mailing address for the new Fresno offices is P.O. Box 3190 and the telephone number is 8-4477.

George W. Lawler will continue as sales engineer for the San Joaquin Valley area, and D. W. Vandiver, who has been located at the Lummus offices in Dallas, is moving to Phoenix to serve as sales engineer for Arizona, the Imperial Valley of California and the Mexicali area.

The new Fresno offices begin to function on Oct. 1 and Lummus expects to have the new construction completed and to begin handling the sale of the firm's own repair parts shortly after the first of the year.

"We are opening this new office to give better service to our customers in that area," Lummus commented. With the addition of the new offices and the warehouse in Fresno to the Dallas, Memphis and Columbus offices, the firm will be in a position to render maximum service throughout the Cotton Belt.

■ **C. W. SCOTT, Western Cottonoil Co., Lubbock, Texas, is district governor of Toastmasters International.**

At Sweetwater, Texas

Oil Mill Executive, Civic Leader Dies

■ R. M. SIMMONS had been active in the crushing industry in West Texas since 1919.

Robert M. Simmons, 77, vice-president and general manager of Sweetwater Cotton Oil Mill and longtime civic leader of that city, died at his home on Sept. 20 after a long illness.

It would take a good sized book to tell all about Bob Simmons and the work he did during his lifetime of service to his friends and community. The story of this man is interesting from beginning to end because his life was filled with hard work and success.

He was born in Dallas on Oct. 16, 1877, and moved with his family to Decatur. He spent his childhood there and graduated from St. Edwards College in Austin in 1897, with a degree in business administration.

He was employed in his father's wholesale grocery and cotton business until the spring of 1898 when the U.S. declared war on Spain.

When President William McKinley called for 100,000 volunteers, Simmons volunteered and was commissioned a second lieutenant in old Company "H," the third Texas volunteer infantry.

At the end of the war, he was captain of that same company in the national guard. He later became a major and was on the staff of Gen. A. P. Wozencraft of the Texas National Guard.

In the spring of 1902, he was sent to Hobart, Okla., by D. Waggoner and Sons, his employer, to help build a cotton oil mill and 25 cotton gins. The Waggoners sold these properties after one year of operation, but Simmons stayed on as manager of the gins.

In 1905, he acquired an interest and the managership of the Texas Almaden Mining Co. at Terlingua, Texas, where he tried mining quicksilver for two years at the mouth of the St. Elena Canyon of the Rio Grande River.

In 1907 he went back to work for Hobart Cotton Oil Mill Co. and lived in Oklahoma from 1907 to 1919. Then he acquired an interest with his brothers in the Simmons Cotton Oil Mills with plants in West Texas and New Mexico. His brothers were J. W. of Dallas, T. B. of Quanah and G. A. of Lubbock.

Simmons was elected vice-president and general manager of the Sweetwater Cotton Oil Co. and remained in that capacity until his recent death.

He served on the city board, Sweetwater hospital board, and Nolan County Red Cross board; he was one of the founders of the National Bank of Sweetwater, of which he was chairman of the board of directors. Other activities included Boy Scout work, Rotary Club and Goodfellows. He had been a director of the Orient Division of Panhandle and Santa Fe Railroads since 1945. Simmons was elected the city's "Number One Citizen" in 1937.

He was cited by Pope Pius XII in 1953 in recognition of his long years of distinguished service to the Catholic Church. He was presented the Benerementi Medal and is the third person to receive such recognition in the Amarillo Diocesis.

R. M. SIMMONS

Simmons married the former Emma Hollinsworth Broaddus of Kansas City, Mo. in 1909. Surviving are his widow and two daughters, Mrs. Clayton B. Williams of Sweetwater and Mrs. John H. Patton of Rotan and four grandchildren; one brother, J. W. Simmons, and two sisters Mrs. Rita Lovelace and Mrs. Hibernia Evans, all of Dallas.

Rosary was recited Wednesday night, Sept. 21, in Sweetwater and Requiem Mass was celebrated there Thursday morning, Sept. 22. Burial was in Calvary Hill Cemetery in Dallas.

• Advertisments Will Help Sales of Feed

ADVERTISEMENTS which will help cotton oil mills to sell their feed products are being published in farm and livestock papers at this time by the Educational Service of the National Cottonseed Products Association.

To supplement its regional and national advertising, the Educational Service has made available mats of the advertisements for NCPA members to publish in local newspapers. Three mats are obtainable for 25 cents, each, from the Educational Service headquarters, 618 Wilson Building, Dallas.

Cotton Pipe, Possible Metal Substitute

A new and unusual use for cotton has been found by Shaw and House Co. of Hickory Ridge, Ark.

A patent has been granted to this firm for an irrigation system known as "Porta-Pump." The oustanding feature is that the pipe is made of cotton osnaburg (a stout, coarse cotton fabric). The pipe is only a fraction the weight and cost of metal pipe; it is vinyl-coated, and waterproofed at the seams with rubber glue, according to B. L. House.

He says the pipe and system have been tested at Monette by the National Cotton Council and Porta-Pump Co., and several universities have inquired about the sytem for testing and use on their farms.

• Texas Ginners Given Insurance Credits

TEXAS GINNERS will benefit from a number of amendments to Texas General Basis Schedules for insurance which were made effective Sept. 15 by the Texas Board of Insurance Commissioners.

Horace Belew, Western Cottonoil Co., Abliene, chairman of the insurance committee of Texas Cotton Ginners' Association, reports that the action includes the following:

Credits had been requested on gin stock insurance rates for any gin equipped with a 250-gallon mobile-pressurized tank, also for any gin which provided standard watchman services. Amendment No. 195 provides the following credits:

"a. For at least one acceptable 250 gallon mobile pressurized tank filled to proper capacity with 'wet water,' maintained in good operating condition and always accessible for ready use, with hose attached and with self-propelled vehicle on premises and available for transporting the tank, deduct from the rates as shown:

	Protected	Unprotected
Item 1. Consolidated Gin Stocks	50c	60c
Item 2. Seed Cotton	50c	60c
Item 3. Baled Cotton	28c	35c
Item 4. Cottonseed	20c	26c
Item 5. Bagging and Ties	20c	26c

"b. For watchman service deduct from rates shown:

Item 1. Consolidated Gin Stocks	50c	60c
Item 2. Seed Cotton	50c	60c
Item 3. Baled Cotton	28c	35c
Item 4. Cottonseed	20c	26c
Item 5. Bagging and Ties	20c	26c

"4. To obtain watchman credit it is necessary that a watchman be employed during the term of the insurance, provided with an approved labeled watch clock and that hourly rounds be made night and day at all times when a ginning crew is not on the premises. Watchclock stations should be so located and sufficient in number to insure complete coverage of all areas on which or in which seed cotton, baled cotton or cottonseed are kept or stored. Watchclock records to be dated and filed in an iron safe or outside the premises for at least 30 days."

A request for approval of bur burners constructed of adobe brick for west of the Pecos River and Ward, Winkler and Loving Counties resulted in Amendment No. 189, as follows:

"(6) In lieu of requirements No. 1 under Note 2, bur burners constructed of not less than 12 inches of adobe blocks with not less than one inch of adobe mud on the inside and outside will be accepted as standard in all counties west of the Pecos River and also in the three counties of Ward, Winkler, and Loving. All other requirements under Note 2 shall be complied with."

A request for credit for gins equipped with "roller type stands," because of the smaller possibility of fire in this type of gin, resulted in Amendment No. 190, as follows: "If gins are 'roller type,' not saw type, reduce rate produced under foregoing schedule 25 percent."

■ S. N. REED of O'Brien, Texas, president of the National Cotton Ginners' Association, is building a new gin in the Happy-Union community near Plainview.

Cotton-From Field to Fabric, Theme of Carolina Fair

The North Carolina state fair to be held Oct. 18-22, is to feature the state's most important crop—cotton.

The plan to feature cotton at this year's state fair is a continuation of the program started in 1953, when major emphasis was placed on small grains. Last year tobacco claimed the fair spotlight.

Through the complete cooperation of all agricultural agencies and the state's cotton industry this year's feature promises to be even greater than the two preceeding years, according to manager, Dr. S. S. Dorton. Even the USDA will be brought into the picture. It will send one of its outstanding exhibits on cotton.

This feature is being planned at a time, according to farm leaders, when the need to inform the public of the real importance of cotton to North Carolina is imperative. When finished products and by-products are considered, more natives derive their income from cotton than any other source.

• Isopropanol Process Is Granted Patent

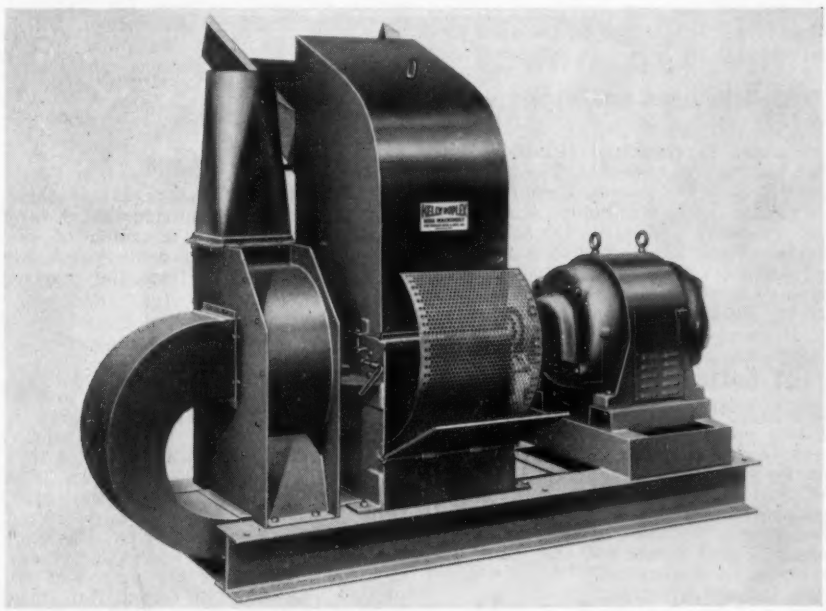
A PATENT has been issued on a process for isopropanol extraction of alfalfa residues to improve livestock feeding, and the holder of the patent feels that the method will be of interest to cottonseed processors and other feed manufacturers.

U.S. Patent 2,717,207 was issued Sept. 6 to Dr. Artemy A. Horvath, 522 Acequia Madre, Santa Fe, N.M. Doctor Horvath is the former head of the chemistry department at the Delaware Experiment Station and is the author of "The Soybean Industry," and other publications on oilseeds and chemical subjects.

■ R. A. ELMS, manager of Western Cottonoil Co. mill at Littlefield, Texas, is chairman of the chamber of commerce agriculture committee and Rotary rural-urban committee, and active in Methodist and Boy Scout programs.

Named Seed Distributor

J. G. BRUTON, Okemah, Okla., has been named exclusive distributor in Oklahoma for Delta & Pine Land Co., Scott, Miss., cotton planting seed. This includes Deltapine 15, D & PL-Fox and Deltapine Staple Breeder's registered seed. Bruton for a number of years was a cotton factor and connected with the seed business in Oklahoma and West Texas. For some time he was connected with Kimbell Cotton Oil Co.



The new Kelly Duplex K-20 Hammermill.

New Product

HAMMERMILL DESIGNED FOR HEAVY DUTY GRINDING

The new Kelly Duplex K-20 Hammermill is designed to handle heavy duty grinding requirements in the 75 to 125 H.P. class . . . and bears the manufacturer's money back guarantee that it will grind more grain with the same power, conditions being equal, than any other hammermill on the market, the firm states.

Ruggedly constructed throughout, the body is made of half-inch boiler plate; is arc welded throughout; and is mounted on a structural steel frame. The grinding surface is extra large. The 48 interchangeable, swing type hammers are made of special abrasion resistant alloy steel and are reversible to give four cutting edges. A door on the front of the mill permits easy, instant screen change without lifting the mill cover.

Other special features listed by the manufacturer include a ten-inch blower which easily handles fine, medium, or coarse material at the full capacity of the mill . . . a one piece alloy steel fan treated to withstand the abrasive action of ground grain . . . a specially reinforced blower housing . . . an oversized rotor shaft precision machined from high grade manganese steel . . . strong, flexible heavy duty coupling . . . oversized bearings . . . and a feed collector that handles all types of grinding. The entire mill is dynamically balanced.

Available in either 75, 100 or 125 H.P. models, the K-20 can be furnished with either a regular or a hay top mill cover; with either a plain mill chute or a large, adjustable, three-position chute; and with either a direct connected motor with flexible coupling or with a V-sheave and outboard bearing for belt drive.

For further details, write Duplex Mill and Manufacturing Co., 415 Sigler Street, Springfield, Ohio; or The Cotton Gin and Oil Mill Press, P.O. Box 7985, Dallas 26.

Farm Employment To Show Continued Decreases

Employment on farms had declined less than expected during the past few months, USDA observers report, but they foresee nothing except a continuation of the long-time downward trend in employment in the future.

This reduction in use of hand labor on farms results directly from the increase in mechanization and the increase in the size of the average farm.

In 1945, there were 2,907,000 hired farm workers, compared with 2,603,000 in July 1954 and 2,696,000 this July.

A further decline in agricultural employment is anticipated by agricultural experts once mechanization of cotton can be carried out as far as it has by farmers elsewhere for other crops. The South, where most of the cotton is grown, is one of the major agricultural employment areas.

The Agricultural Research Service reports that in 1930 one farmer could support 9.76 persons on crops and livestock he raised. There were then 9,307,000 farm families and some 3,190,000 hired hands. Now, with about one-third fewer farm families and about 500,000 less hired hands, one farm worker can raise enough food and other products to support 18.53 persons.

Oklahoma Ginners To Meet in City

Oklahoma Cotton Ginners Association will hold their annual meeting March 9-10. The meeting will be held at the Skirvin Hotel in Oklahoma City.

as viewed from The "PRESS" Box

• Good-By to Guesswork

GUESSWORK is disappearing from this cotton business, and it's a good riddance. Haphazard production, processing and marketing of cotton must go if the crop is going to be able to compete with other products, synthetics or foreign growths. This is obvious from the discussions at the ninth annual Beltwide Cotton Mechanization Conference, reported in this issue. Speaker after speaker stressed the need for greater accuracy and better management, whether it's in planting, irrigating, harvesting, ginning, selling or using the fiber at the mill.

Necessity is forcing this change, but it's possible only because public research institutions and private industry pioneered in studying ways to do the job. For example, The Press recently carried an item saying that American Cotton Shippers' Association had appointed the University of Texas Cotton Economic Research to calibrate samples as standards for evaluating cotton at laboratories throughout the world. This industry should note two facts: (1) Pioneering at the University was a big factor in bringing this about; and (2) Foreign countries are grasping the opportunity to improve their cotton quality, as Dr. Earl E. Berkley pointed out in another recent issue of The Press.

This trend is not confined to the fiber part of cotton. Another article in The Press, on Sept. 10, said feed manufacturers want to use more cottonseed meal, but that use of cottonseed meal in the past has been limited by "lack of uniformity that exists in processing, which results in a non-uniform product." The authors emphasized that high-quality, uniform meal now can be produced, as a result of cooperative research by the crushing industry, public agencies and others.

Other examples could be cited endlessly. Bnt the important fact to remember is that all of us—ginners and crushers as well as producers or spinners—must keep up this trend toward better management and better products. If we don't, we and our products are going to get left behind in the race for markets.

• Old Bale Goes on Display

THAT ANCIENT BALE of cotton which was harvested in Mississippi in 1862 has been rejuvenated. The bale has been stored in the Federal Compress and Warehouse at West Point, Miss., but was recently presented to Anderson, Clayton & Co. The firm had it re-baled and covered with a special covering and chrome-plated ties and buckles. The bale will be placed on permanent display at the Houston Cotton Exchange.

• Get Cotton Out—Two Ways

GET COTTON OUT of the field early in two ways, advises Freeman Fuller, Texas Extension entomologist. The crop should be harvested as early as feasible, then the stalks need to be shredded and plowed under promptly to reduce the food supply for weevils and pink bollworms. Fuller points out that stalk destruction on a community- or area-wide basis is most effective.

• Tariff Cut Criticized

TARIFF SLASHES which became effective Sept. 10 on cotton textiles have brought critical comments from spokesmen for the American Cotton Manufacturers' Institute. A. K. Winget, president, said that the situation demands a "cut-off" point for foreign imports; and J. Craig Smith, a past president, commented that "the sharply reduced tariff rates expose the U.S. cotton textile industry and the American cotton farmer to damage which can be as real and costly . . . as any hurricane or flood catastrophe."

• Dividend From Protein

COTTONSEED MEAL paid a big dividend in Mississippi research cited recently by the Educational Service of the National Cottonseed Products Association.

"Cows receiving one pound of cottonseed meal daily produced 11 percent more calves weighing 18 pounds more than cows receiving no protein supplement," Mississippi Animal Husbandry Head C. E. Lindley reported. "It doesn't take much figuring to show that the one pound of cottonseed meal was returned several fold in extra calves and extra pounds on the calves produced."

• Good Seed Are Cheapest

GOOD SEED are the cheapest seed, E. C. Westbrook, Georgia Extension agronomist, reminds farmers. The chairman of the Georgia Crop Improvement Association add "one of the best ways for farmers to be assured that they have good seed is to plant certified seed."

• Soldiers Drink Milk

MILK CONSUMPTION by U.S. armed forces increased nearly 100 million pints from November, 1954, through June, 1955, USDA reports. The increase resulted from a special program to stimulate expanded use of dairy products.

• Rules on Trucks Studied

W. D. GRIFFIN, Producers Cotton Oil Co., Fresno, Calif., heads a special committee on trucking rules for National Cottonseed Products Association which will meet Oct. 3 in Memphis. NCPA members having suggestions should send them to him or to the NCPA office at 19 South Cleveland, Memphis.

• Gin From Bird Cage

POPULARITY of the parrakeet these days serves as a reminder that a bird cage figured in the invention of the cotton gin more than a century ago. Eli Whitney used wires from the cage in his first gin.

• $2 for Long Staple

FIRST LONG STAPLE cotton in South Carolina was grown successfully in 1790 on Hilton Head Island. Others grew it and Kinsey Burben, Sr., of Colleton County sold his long staple crop of 1825 for $1.16 a pound, then sold two bales in 1828 for the high of $2 per pound. William Seabrook is said to have offered him $50,000 for his secret. At the same time the legislature was about ready to offer $200,000 for his method of improving the staple of cotton. But about that time it leaked out that his method consisted of careful and skillful field selections.

• Cotton at the Seashore

FEMININE swim wear made of cotton has increased steadily in popularity since 1952 and the trend is expected to continue, according to the market research department of the National Cotton Council. Retailers attribute this popularity to cotton's lower price, greater comfort, and versatility in color and style.

• The Vanishing Horse

A SIGN of the times that is pretty conclusive evidence to us of the disappearance of the horse (and, as far as we are concerned, of romance) is a report that the younger set in Dallas is going on hayrides in tractor-pulled wagons. But, on the other hand, Marion Sherman, blacksmith at Springfield, Mo., believes the horse is here to stay. He has more horseshoe orders than he can handle, Sherman reports.

Certified and Registered

COTTON SEED

●

ALL VARIETIES

●

Plains
Delta Pine 15
DPL Fox
Empire
Coker 100-W
Stoneville 2-B

●

CARLOAD LOTS

ALEXANDRIA SEED CO., INC.

P. O. Box 1946-G
ALEXANDRIA, LOUISIANA

• Council Committee Holds Meeting

THE INDUSTRYWIDE COMMITTEE of the National Cotton Council which is considering future plans for that organization held a meeting at the Peabody Hotel in Memphis Sept. 16-17.

The committee received information two months ago on proposals to expand activities of the Council and considered these proposals at the September meeting.

Harold A. Young, North Little Rock, Ark., is chairman; and members of the committee include the following:

West—Harry S. Baker, Fresno, Calif.; James G. Boswell, II, Los Angeles; W. B. Coberly, Jr., Los Angeles; Cecil H. Collerette, Casa Grande, Ariz.; R. T. Hoover, Jr., El Paso, Texas; J. Russell Kennedy, Bakersfield, Calif.; P. W. Peden, Los Angeles; Harold Pomeroy, Bakersfield,Calif.; George W. Spence, Ysleta, Texas; Delmar Roberts, Anthony, N.M.; J. Clyde Wilson, Buckeye, Ariz.

Southwest—B. L. Anderson, Fort Worth, Texas;R. O. Beach, Sr., Houston, Texas; George G. Chance, Bryan, Texas; Roy B. Davis, Lubbock, Texas; A. L. Durand, Hobart, Okla.; W. D. Felder, Jr., Dallas; Joe Flaig, Dallas; Lamar Fleming, Jr., Houston; Roy Forkner, Lubbock, Texas; Jack Funk, Lyford, Texas; J. Walter Hammond, Tye, Texas; P. E. Harrill, Oklahoma City, Okla.; Burris C. Jackson, Hillsboro, Texas; Jerome Jalufka, Robstown, Texas; Aubrey L. Lockett, Vernon, Texas; Jack J. Stoneham, Dallas; Harris F. Underwood, Lubbock, Texas.

Mid-South—L. T. Barringer, Memphis; N. C. Blackburn, Memphis; Everett R. Cook, Memphis; E. F. Creekmore, Sr., New Orleans; W. M. Garrard, Greenwood, Miss.; W. L. Gatz, Paragould, Ark.; Joe C. Hardin, Grady, Ark.; Tom J. Hitch, Columbia, Tenn.; A. E. Hohenberg, Memphis; Garner M. Lester, Jackson, Miss.; Alan G. Patteson, Jonesboro, Ark.; J. B. Perry, Jr., Grenada, Miss.; A. Q. Peterson, New Orleans; C. R. Sayre, Scott, Miss.; Boswell Stevens, Macon, Miss.;A. L. Story, Charleston, Mo.; Howard Stovall, Stovall, Miss.; R. B. Williams, Cincinnati;W. T. Wynn, Greenville, Miss.

Southeast—E. H. Agnew, Anderson, S.C.; F. J. Beatty, Charlotte, N.C.; D. W. Brooks, Atlanta; E. N. Brower, Hope Mills, N.C.; Harry B. Caldwell, Greensboro, N.C.; C. A. Cannon, Kannapolis, N.C.; J. M. Cheatham, Griffin, Ga.; Robert R. Coker, Hartsville, S.C.; Percy S. Howe, Jr., New York; E. H. Lawton, Hartsville, S.C.; Ellison S. McKissick, Easley, S.C.; J. F. McLaurin, Bennettsville, S.C.; Allison H. Pell, Charlotte, N.C.; Walter L. Randolph, Montgomery, Ala.; R. Flake Shaw, Greensboro, N.C.; Charles W. Shepard, Jr., Gadsden, Ala.; J. Craig Smith, Sylacauga, Ala.; Adolph Weil, Sr., Montgomery, Ala.; H. L. Wingate, Macon, Ga.

Oklahoma To Name Maid

Oklahoma Maid of Cotton Committee, 244 American National Building, Oklahoma City, is receiving entries in the state's 1956 Maid of Cotton contest. The final contest in Oklahoma will be at the Biltmore Hotel, Oklahoma City, Nov. 4-5.

Farm Equipment Convention Held in New Orleans

Forecasts for American agriculture and industry highlighted the sixty-second annual convention of the Farm Equipment Institute, held at New Orleans Sept. 19-21.

Speakers scheduled at the convention included Ezra Taft Benson, Secretary of Agriculture; Charles B. Shuman, president, American Farm Bureau Federation; Henry T. McKnight, president, Council for Agricultural and Chemurgic Research; and Robert S. Stevenson, president, Allis-Chalmers Manufacturing Co.

Also, Frank H. Hamlin, president, Papec Machine Co., and chairman of the executive committee of the Farm Equipment Institute; Ted B. Miller, president, National Retail Farm Equipment Association. The final speaker scheduled was Dr. Nicholas Nyaradi, former minister of finance of Hungary, currently professor of economics, Bradley University. Bruce Lourie, vice-president, Deere and Co., is president of the Institute.

New Cotton Felt Plant Opened in Memphis

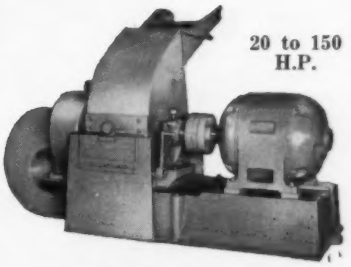
Operations began Sept. 14 at the new cotton felt plant of Kroehler Manufacturing Co. in Memphis. The furniture firm's Memphis plant is devoted exclusively to blending cotton to produce felt and can handle 96,000 pounds of cotton daily.

Lyle White is manager of the operation, which requires 14 employees.

FOR A WELL-ROUNDED PROFIT PICTURE,

round out your ginning business with custom grinding and mixing.

Jacobson QUALITY GRINDING EQUIPMENT and ENGINEERING



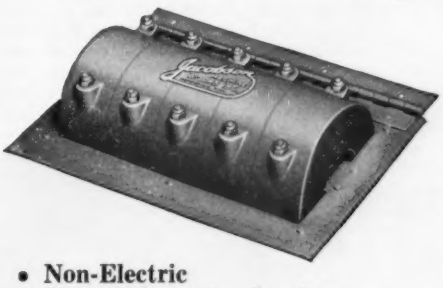
20 to 150 H.P.

"AJACS" Hammermill

will assure you of a profitable operation

Tell us what you want to grind, and we'll help you decide what Jacobson equipment to use, and how to lay out your plant for maximum production and efficiency.

Protect Costly Machinery with Jacobson "Economy" Magnetic Separators



To prevent fires and damage to your ginning and other equipment, use Jacobson "Economy" Alnico Permanent (non-electric) Magnetic Separators. They remove dangerous "tramp" iron before it can cause trouble. Easily installed—no electrical connections. Insurance rates go down, product quality goes up. Write for prices and additional information.

- Non-Electric
- Hinged for easy cleaning

Write for Bulletins and the Name of Your Jacobson Sales Engineer

JACOBSON MACHINE WORKS

1090 Tenth Ave. S.E. Dept. K Minneapolis 14, Minn.

Progress of the Crop

COTTON'S development and harvesting have been about normal during the month of September although, as usual, conditions are rather spotty, ranging from too wet in coastal areas of the Southeast to too dry in the Southwest. On the whole, prospects continue good and yields should set new highs in many localities although lateness of the crop is causing concern in late-planted areas as to the possibility of an early frost.

Insect damage throughout most areas has not been unusually heavy, but there is a large boll weevil population in the Midsouth and some other areas. This represents a major threat to next season's crop unless stalks are destroyed promptly to prevent the over-wintering of many weevils. Also a potential threat next season is the number of pink bollworms found in Texas coastal area inspections.

ALABAMA became increasingly dry throughout September, except for scattered showers, and some cotton shed excessively in northern areas; but the crop on the whole is good to excellent. Picking made good progress, is about completed in the southern part and one-fourth over in the north.

Cotton in **ARIZONA** made good growth, with new bolls setting well and older bolls opening freely. Picking was in full swing in most counties, but some growers were still poisoning for worms and leaf perforators. Yellow-fibered cotton, caused by a fungus, is reported from a number of communities.

Weather was favorable in **ARKANSAS** for harvest, which is well under way. Cotton opened rapidly, and yields were good in most areas. Late fields are being poisoned.

CALIFORNIA's dry weather favored more rapid development of a crop that is later than a year ago, and aided harvest. Fresno County's first bale was ginned Sept. 15. Picking was well under way in Imperial and Palo Verde valleys.

Picking in **GEORGIA** has become general, and was about completed in the southern counties. Both yields and quality have been good, except where quality was hurt by excessive local rains.

LOUISIANA's good cotton crop was more than half picked. Weevils continued to increase.

Dry, open weather over most of **MISSISSIPPI** favored harvest of the cotton crop. Weevils were migrating heavily and a large population is likely to go into winter.

Hot, dry weather continued in **MISSOURI**; this favored progress of harvesting but hurt late cotton prospects.

NEW MEXICO has been dry but irrigated cotton progress and outlook were about average. Bollworms have done severe damage in Hidalgo and Luna areas, and somewhat less injury in other counties. Light pink bollworm infestations were found in Dona Ana County.

Locally heavy rains in **NORTH CAROLINA** injured some cotton, but condition and progress of the crop were fair during most of the past two weeks. Less than one-fourth of crop has been picked.

Dry weather hurt cotton prospects in **OKLAHOMA**, but an early freeze would hurt even more. Bollworms were still doing some damage. Picking was getting under way.

SOUTH CAROLINA reported wet weather hurting open cotton severely in coastal areas, but picking making fair progress elsewhere. Weather favored weevils and boll rotting.

Cotton in dry **TENNESSEE** was shedding excessively and opening fast, but yield prospects still were good.

TEXAS had locally heavy rains that hurt some open cotton and hampered harvesting, mostly near the coast. Picking was at its peak in the northern Blacklands and increasing in the Plains and Trans-Pecos regions. Most of the dryland cotton on the Plains needed moisture; but irrigated crops made good progress and the outlook was for good yields, with a normal or later frost. Green boll inspections have shown heavy pink bollworm infestations in Coastal Bend counties.

Automatic Control at Gin Subject for Research

Will automatic controls provide a practical and effective way to assure proper drying of seed cotton at gins? To answer this question is the purpose of tests now under way in Mississippi.

National Cotton Council, USDA Cotton Ginning Laboratory at Stoneville, Miss., and Knowlton Gin and Delinting Co., Perthshire, Miss., are cooperating with Minneapolis-Honeywell Co., manufacturer of automatic controls, in the research.

Ground-Water Level Trend Downward in New Mexico

Heavy rains partially replenished ground water reservoirs in August and October, 1954, in southeastern New Mexico; but Secretary of the Interior Douglas McKay reports a five-year study indicated a general decline of ground-water levels since 1950.

Comparative measurements made around Carlsbad in January, 1950, and 1955, showed a decline of more than five feet in an area of 87 square miles, a decline of more than 10 feet in 51 square miles, more than 20 feet in 24 square miles, more than 30 feet in four square miles, and more than 40 feet in less than one square mile.

During 1954 the water level varied from a decline of more than four feet to a rise of more than six feet. All rises in 1954 were caused directly or indirectly by general rainstorms during August and October. The principal factors effecting these changes were: 1. infiltration of water into the ground-water reservoir from the general land surface and from flooded arroyos during and immediately after the storm, 2. infiltration of water from irrigated fields and irrigation systems that were supplied with flood water and 3. the shortened pumping season which reduced the amount of water pumped and allowed more time for the water level in wells to recover.

The prediction for 1955 is that water levels in wells east of the Southern Canal should continue to rise as a result of irrigation from the Pecos River. Water levels in heavily pumped areas where no surface water is available should decline unless heavy rains such as those of August and October, 1954, replenish the ground-water reservoir and shorten the pumping season. This will include the area south of Carlsbad and west of the Southern Canal.

A tabulation of the water-level measurements and maps showing the changes in water level are on file and may be consulted in the offices of the State Engineer at Santa Fe and Roswell, N.M., and offices of the Geological Survey, 201½ S. Canal, Carlsbad, N.M.

R. L. McClung Manager of Midwest Co-op Oil Mill

R. L. McClung is now manager of Midwest Cooperative Oil Mill at Hamlin, Texas. He is a graduate of the University of Texas. For 13 years he was with the Federal Land Bank of Houston as auditor and as chief accountant of the Houston Bank for Cooperatives. Just prior to coming to Hamlin he was chief accountant and office manager of the Farmers Cooperative Compress in Lubbock. He and Mrs. McClung, the former Ruth Keith of Round Rock, have one daughter and one son.

Cotton Fellowships Awarded

Oscar Johnston Cotton Foundation fellowships have been awarded to Franklin M. Kearse of South Carolina and Stephen J. Brannen of Georgia. Both men will do graduate work at North Carolina State College this year.

The fellowships this year make a total of eight approved by the Oscar Johnston Cotton Foundation over the last four years.

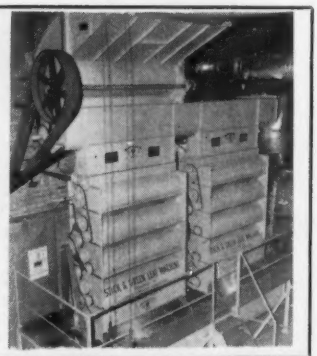
Stick and Green Leaf Machines

U. S. D. A. Designed

What else can you buy that will remove 70% of all the trash in seed cotton in one operation?

HINCKLEY GIN SUPPLY CO.

4008 Commerce St., Dallas, Texas



Represents Soybean Group

GEORGE PRICHARD, Washington, has been appointed to represent the National Soybean Processors' Association in Washington. He succeeds Edward J. Dies. Prichard also is executive secretary of the National Flaxseed Processors' Association and formerly was head of USDA's Fats and Oils Branch.

• Fats Improve Beef And Hog Rations

FATS added to feeds gave good results in preliminary tests with cattle and sheep at the North Carolina Experiment Station, according to a report in Research and Farming, published by the Station.

• **Faster Cattle Gains**—Yearling cattle fed a fattening ration with five percent animal fat added to the concentrate portion of the diet made faster gains and required less feed per pound of gain than cattle receiving the diet without added fat. Similar results were obtained in a test using hydrolyzed vegetable fat, a by-product from the refining of cottonseed oil.

In each of these trials six pounds of corn per 100 pounds of the concentrate diet were replaced by five pounds of fat and one pound of soybean oil meal. This resulted in diets of approximately equal protein content, but the concentrate with the added fat was slightly higher in energy.

The first trial was conducted for a period of 141 days. Fat fed cattle gained a quarter-pound more daily (2.25 pounds vs. 2.00 pounds) on 60 pounds less concentrate and 40 pounds less hay per 100 pounds gain than cattle on the diet without added fat.

Carcasses from the fat fed cattle graded slightly higher, and no bad effects of the animal fat were noted.

The trial with hydrolyzed fat ran for 119 days. Again, the fat fed cattle made faster, more efficient gains. They gained 0.24 pounds more per day on 68 pounds less concentrate and 52 pounds less roughage per 100 pounds gain.

• **Used in Wintering Ration**—In a wintering trial, animal fat was compared with corn as a source of energy for feeder calves, using cottonseed hulls as roughage.

The daily corn allowance of 2¾ pounds for the control animals was replaced by three-fourths pound of fat and one-half pound of soybean oil meal. The two supplements were fed at a rate that gave equal energy, protein, mineral and vitamin intakes. However, animals did not eat all the supplement containing the added fat.

In this test fat fed animals gained a bit slower than the control animals (1.36 pounds compared to 1.50 pounds daily). However, they required 40 pounds less supplement and 48 pounds less cottonseed hulls per 100 pounds gain.

• **Pigs 20 Percent More Efficient** — Feeding efficiency was increased 20 percent by feeding diets containing 10 percent added fat to pigs. These results were obtained in two feeding trials with pigs fed from weaning to market weight on diets containing added animal and vegetable fats.

The first trial was conducted during the winter months. Pigs on the fat diet ate only 288 pounds feed per 100 pounds gain, while those on control diets required 347 pounds. Pigs on the fat diet also gained faster — one-third pound more per day (2.37 pounds vs. 2.02 pounds.)

Rate of gain was less marked during a summer trial, but the advantages in feed efficiency were just as great as in the winter trial.

Fats used in these tests were worth 10 cents a pound on the basis of feed saved. That's figuring corn at $1.68 per bushel and soybean oil meal at $90 per ton.

COKER 100 WILT COTTON

Picking 100 boll samples in a Coker cotton breeding nursery at Chester, S. C.

Dependable

- For High Yields, Premium Staple
- For More Dollars Per Acre

Coker 100 Wilt is a well-balanced cotton that can be depended upon for superior performance under a wide range of growing conditions and in most parts of the Cotton Belt. Its high quality staple and excellent yielding ability combine with wilt resistance, storm proofness, satisfactory gin turnout and ease of picking to make it a dependable cotton, year in and year out. In 42 state cotton growing contests, Coker 100 Wilt has won first place 39 times.

COKER'S PEDIGREED SEED CO.

HARTSVILLE, SOUTH CAROLINA

The South's Foremost Seed Breeders

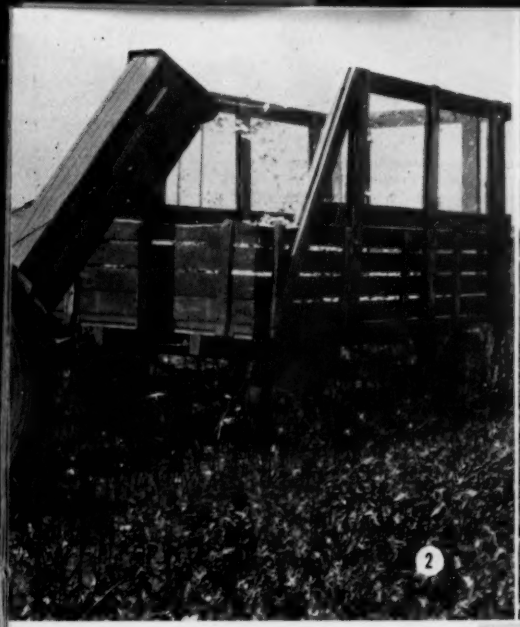
At Temple Substation, Sept.

Scenes at Mec Conference

CLIMAX of the ninth annual Belt ence was a tour which gave the cotton production in the region in v view demonstrations of mechanical e

Those attending the conference are reported throughout this public 7-8, at Texas A. & M. College; and research facilities on the afternoon o the group boarded busses for a trip of the Blackland cotton region to La was host at lunch, and went to the Texas Experiment Station for field

Mechanical strippers were spotli eight different makes of these ma Southwest, are pictured here. Photo vesters which gather cotton with a ism. Photos No. 3 and 6 show two-ro The machine in Photo No. 5 is one-r roll type harvesting device. Photos N which have a finger-type mechanism



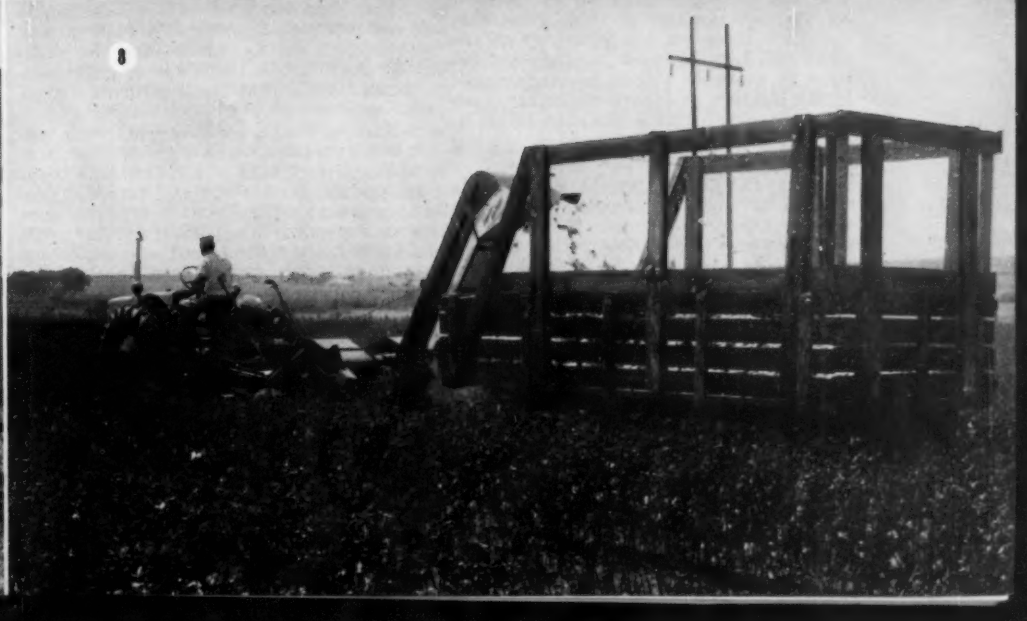
2

chanization Demonstration

wide Cotton Mechanization Confer-
ose attending an opportunity to see
which the meeting was held and to
quipment for cotton.
this year heard discussions (which
ation) on the first two days, Sept.
made a tour of the school's nearby
of the second day. On the final day,
from College Station through part
ankart Seed Farm, where that firm
Temple Blackland Substation of the
demonstrations.
ghted in these demonstrations, and
chines, so extensively used in the
s No. 1, 2 and 4 show two-row har-
single steel roller and bar mechan-
w machines with double steel rollers.
ow equipment and features a brush-
No. 7 and 8 show two-row harvesters
for harvesting.

5

7



8

(Continued from Page 24)

stepped-up program of utilization research might result if the sturdy crutch of price support under cotton were shortened. Everyone of us here might be out doing more intensive research to save and strengthen cotton if it were strictly on an economic survival of the fittest basis.

If cotton really were threatened in its succession of existence, and if there were no artificial supports under the crop, there probably would come into being one of the most intensive research programs you could imagine. No recommendation is implied; just observation of a situation and recognition that research is a must if cotton is to make its way out of the hurricane of competition and into fairly smooth sailing again.

Cotton's Future:

USDA-Land Grant College Extension Programs

BY C. M. FERGUSON, Washington, Administrator, USDA Extension Service.

One of the problems of cotton in a competitive field is reducing the cost of production.

Reduced costs of production will depend almost entirely on the degree of success which a grower enjoys in putting into a harmonious whole the many findings of science which have a bearing on his production per acre, his production per man or machine hour. Extension workers have a key role to play in helping the grower do this job.

Traditionally we have done extension work in rather highly specialized segments following the common pattern of organization of our colleges and research institutions. Today we are making progress in bringing all of the disciplines which have a bearing on any one farm or any one enterprise into a compatible total package of inter-related information and helping the farmer put together on his own farm the technology and the economics of operating it as a sound economic unit.

• **New Approach Used** — Complete cotton farm demonstrations are being successfully developed by teams of agronomists, plant breeders, soil chemists, plant pathologists, engineers and economists. It now appears that there will be some 800 such demonstrations across the Cotton Belt by the end of 1955. This team approach increases the efficiency of the staff and help growers to study the results of research and to see each result in its relation to others. It brings each facet of science into a clear-cut relationship with the other facets, thus helping to complete the scientific picture.

Farm and home development, as a method of doing Extension work, is a close-working companion to the team approach of the complete cotton demonstration. It is designed to help the individual farm family evaluate its resources and to put to work the best combination of all the technology and economies in solving the problems arising with individual families on individual farms.

Where this method is being used, many families are realistically facing up to the problem of fitting the size of their operation, the necessary capital, credit, and available labor and all the technology available into a successful economic unit that can succeed in a highly competitive economic world. Farm and home development is not a program. It is a method of doing extension work. It is a means of helping individual farm families put together the complex jigsaw puzzle of economics and technology in order that the total farm effort becomes a profitable enterprise with costs reduced, profits increased and production developed in line with market potential.

Mechanization, of course, is leaving many farm operations with units which are not efficient. They are often too small to mechanize. There are some million and a half farm families with incomes much too small. In the changing rural scenes many of these families may continue to be rural residents but may be employed part time or full time in industry. Others, through the acquisition of more land, by purchase or lease, or through the development of more specialized, high value crops and farm products, will develop profitable farm businesses.

A combination of the farm and home development method with an expanded community improvement program, which is already making great progress in many of the Cotton States, supported by adequate credit, expansion of vocational training and the introduction of new industry, begins to unfold into what is coming to be known as a Rural Development Program.

• **Training for Mechanization** — Present extension efforts in cooperation with the research people, the Agricultural Marketing Service, the National Cotton Council and the manufacturers of spindle-type pickers are giving assistance in training picker operators in a number of Cotton States. This effort is emphasizing both quality picking as well as efficient machine operation. It is a typical educational effort that will be much in demand in the months and years ahead as mechanization progresses.

This excellent example of teamwork is being expressed this summer in meetings to acquaint machine owners with the importance (market-wise) of proper machine operation. Manufacturers are holding training schools to prepare service men to train picker operators. Dealer training schools are being held in cooperation with extension people, also for operators. Training in the operation of mechanical pickers is no less important than the much older need for training ginners. The two problems cannot be separated if quality is to be maintained and economies effected.

The educational effort in production is a complex one. It involves a wide variety of subject matter which must be skillfully adjusted to the needs of each individual farm! Certainly it involves a careful analysis of costs and returns.

Here in Texas, for example, there was a demonstration which showed a net profit per acre of $111 where $149 was spent in production — in contrast to a net profit per acre of $68 where $85 per acre was expended. The difference in profit results from not one but a combination of good practices based on the findings of research. The dollars invested are only doing a job when they bring efficiency that results in greater results per acre or per man hour.

• **Youth Is Trained** — Extension, while it is making a more intensive effort to assist adult growers with the business of farming, does not overlook the youngsters who will be producing cotton tomorrow. In Alabama, for example, almost 3,500 4-H youngsters got their first introduction to the science of cotton production through 4-H Club projects last year. This type of youth work should help lead cotton to a stronger competitive position in the years ahead.

• **Marketing Not Neglected** — Traditionally, the extension services have been much more active in the field of production than in the fields of marketing, distribution and utilization, but the opportunities in this field are a challenge to both the economists and the technologists.

Extension has for some time been active in the training of producers and ginners and local buyers in the use of better marketing methods. Much work has been carried out in close cooperation with the Agricultural Marketing Service in the development and use of the cotton classing service under the Smith-Doxey Act. This grading and marketing information benefits both producers and buyers in determining cotton qualities and values. This work has also been an important factor in the unprecedented trend to better cotton varieties during the last two decades and unquestionably has been of great value to cotton in meeting its competition from synthetic fibers.

While a great deal has been done on the improvement of quality and on the improvement of ginning, the need for this effort continues and there is a continuing demand for more educational work with local buyers, merchants, processors and other segments of the trade.

• **Consumer Activities** — Consumer education may be another field in which extension will have an effect on cotton's future competitive position. Up to the present time most of our consumer work has been done largely in the fields of foods. Consumer education is coming to be recognized as a very important part of the total marketing program. Consumers, like producers and processors, want facts fresh from the rolls of research. The job of getting marketing research applied to all segments of the industry will, in my opinion, increase very rapidly in the years ahead as the flow of research increases in volume.

Closely associated to the field of marketing and inseparable from it is that of utilization. Within the last year the USDA Extension service has ventured into the cotton utilization field. We have had some previous experience with dairy products and, to a limited extent, with forest products, but we are branching out to experiment with this kind of an educational program in the field of cotton utilization.

Pioneering up to the present time has consisted of the placing on the Extension staff one specialist who is working with the Southern Regional Laboratory, the Land Grant Colleges, the textile schools and the industry. If this work serves a need of industry, as we believe it will, encouragement will be given to the state extension services to add personnel to develop this area of work and tie it more closely to state extension programs.

This field, of course, is one of tremendous scope and in order to keep the work on a manageable basis the initial effort will be limited to single new developments bearing on such utilization problems as opening and cleaning cotton at the mill, nep control and increased card

■ Brief . . . and to the Point

BERNARD DEBONNE, a Frenchman who is visiting in this country, likes the small towns of the U.S., but thinks that farmers should take better care of their land. He said recently:

> "The farmers earn much money, but they don't re-invest in their soils, and this is a great mistake. We've had the same situation in French North Africa: after 60 years the level of fertility became nil. I am sure that the same thing will happen here, if farmers persist in this way."

production, new tightly woven fabrics to meet special consumer needs, and the more effective use of fiber properties to produce higher quality products at lower cost. Later we expect that the results of chemical finishing research will be included.

This new field of work, of course, calls for very close cooperation between extension, the research agencies and industry organizations and only time and experience will reveal the extent to which extension services will be asked to provide this kind of assistance and liaison between research aad trade.

I have in a very sketchy way attempted to give you an over-all picture of the possibilities, potentials and opportunities for the Extension Service as it continues to develop its work with producer, processor and buyer. Now I would like to go back and take a detailed look at what we are shooting at in the field of production.

In recent years, extension has been placing great emphasis on developing ways and means of helping people to plan for themselves. Extension needs to help them sharpen up answers to three questions: (1) What do we have? (2) What do we want? (3) How do we get it?

This effort involves getting a complete inventory of the resources which they have at hand. Such an evaluation of resources must include such practical facts as the average and the range of costs, returns and profits, from current crop and livestock enterprises. Present markets must be evaluated. The concept of farming as a business, either full time or part time, must be clearly established. The land grant colleges should be in a position not only to provide most of these facts but to be ever alert to the gaps and the voids in the information which is needed. And at this point extension and research must be on a shoulder-to-shoulder working basis.

Market potential must be carefully evaluated in setting up the general pattern for future agriculture in any community. Potential reductions in cost of production and distribution, the expansion of markets, and a gearing of production to a potential market demand will point the way to a more prosperous community. The analysis must involve not only a very careful study of the crops which are currently produced in a community but it must visualize the opportunities for the production of other adapted crops or livestock enterprises. It must seek to place each enterprise in its proper place in a pattern of agricultural production where the volume produced not only balances market demand but where market demand may be increased through improved marketing methods, better utilization, reduced handling and processing costs and processing costs and increased consumer demand.

As this process evolves at the county level, as farm leadership sits down and examines its present position, sketches in its potential and lays plans for reaching its goals, every major commodity group must be involved in the process. In the case of cotton it means a critical evaluation of the present situation and the plans which are necessary to make the cotton enterprise on each of these farms a profitable economic venture.

This is not a job any one organization or agency working alone will quickly get done. It calls for team play. I am sure I speak for every extension director and every extension worker when I express great appreciation for the confidence the cotton industry places in extension education and in the ability of extension workers to do a job of helping folks put research to work.

An Analysis:

Mechanical Stripper Adaptability

BY H. P. SMITH, College Station, Agricultural Engineering Dept., Texas A. & M. College.

About 80 percent of all the cotton strippers in the Cotton Belt are located in Northwest Texas and South-Central Oklahoma.

The primary reasons for the concentration and adaptability of stripper harvesters in these areas are:

1. Climate conditions, such as low rainfall, and the short frost-free growing period of only 179 days.
2. Level terrain and large cotton acreages per farm.
3. Cotton not fully mature before frost.
4. Plants do not grow tall even under irrigation.
5: Farmers plant thick stands to hold down vegetative growth.
6. The growing of storm resistant or storm proof varieties.
7. The weather gets cold and disagreeable for hand-harvesting by early November.
8. Cotton can be stripped from the plants and stored in the open without damage from the weather.
9. The stripper harvester provides a machine that can harvest all the crop or salvage large acreages quickly.
10. The gins are well equipped to process either hand-snapped or machine-stripped cotton.
11. The stripper is not used in the High Plains until after frost when there are no green leaves or green sappy bolls.

The adaptability of a cotton stripper to a wide variety of field and plant conditions is affected by the design of the stripping device installed in the machine. The roll-type stripper can handle a fairly wide variety of field and plant conditions. The finger-type is limited in its adaptability to handle tall plants. The softer stripping devices of bristle brushes and rubber stripper rolls will do a satisfactory job of stripping cotton under a wide variety of field and plant conditions. The yielding stripping surface makes it possible to remove the cot-

(Continued on Page 42)

• California Is Host for Cottonseed Meeting

PROGRESS in cottonseed meal resarch and the use of meal in rations fed poultry and swine were discussed at a meeting of representatives of the California cottonseed crushing mills in Fresno, Calif. on Aug. 31. A. L. Ward, National Cottonseed Products Association educational director, was chairman of the meeting.

Dr. A. M. Altschul, Southern Regional Research Laboratory oilseed section head, reveiwed processing research and feeding tests which have made it possible to produce meals well suited to poultry and swine use. He pointed out that both feeders and feed manufacturers have increasing confidence in the value of these meals because of the research which has been conducted. He reminded the industry representatives of major problems which are yet unsolved and explained how current research is being concentrated on these problems.

University of California poultry research worker Dr. C. R. Grau explained the value of cottonseed meal in rations fed growing and fattening poultry and urged the industry to make full use of the available information to produce and merchandise cottonseed meal best suited for this purpose. He reported that additional emphasis is being placed on research which seeks to make it possible to use significant amounts of cottonseed meal in laying hen rations.

The feed manufacturing industry is keenly interested in cottonseed meal of high quality and uniform in chemical analysis, color, and particle size, Hobart R. Halloran, nutritionist for Poultry Producers of Central California and chairman of the American Feed Manufacturers Association nutrition council ingredients committee, told the group. He said that in poultry rations cottonseed meal should be low in gossypol content, high in protein quality, and of such uniform nature that feed formulas need not be changed from shipment to shipment of cottonseed meal received at the plant. He pointed out that the feed manufacturing industry would much prefer a cottonseed meal of high protein content and low in fiber.

Attending the meeting in addition to those who participated on the program were Bill Schwartner and Norman Leffingwell of San Joaquin Cotton Oil Co.; E. J. Cecil, Bill Burns, and George Cavanagh of Ranchers Cotton Oil Co.; Glenn Danielson of Vegetable Oil Products Co.; Brent Bowen of J. G. Boswell Co.; Walter W. Kelley of California Cotton Oil Corp.; J. C. Walsh of S. A. Camp Cotton Oil Co.; W. G. Davis, George Bitter, and I. N. Braddock of Kingsburg Cotton Oil Co.; R. L. Bothwell of Producers Imperial Co.; Carter Sanders, Sam Belden, K. B. Smith, Fred P. Roullard, Jr.; and Milton L. Munro of Producers Cotton Oil Co.; Clayton E. Cox of J. B. Hill Co.; J. C. Beedy of Wilson and Beedy Co.; Arne Jalonea of Topper Feed Mills; Herb Van Zante of Van Zante Sales, Inc.; Fred W. Twining of the Twining Laboratory; V. O. Wolcott, William L. Hunter, and Jack Skinner of the California Department of Agriculture; Dick Beeler, editor of Western Feed and Seed; and Garlon A. Harper of the NCPA Educational Service.

• Humko Will Erect Illinois Plant

HUMKO Co. of Memphis has announced plans to build a new plant in Illinois, possibly at Champaign, to supplement its present facilities in Memphis. The announcement was made by Herbert Humpreys, board chairman, and Sam Cooper, president.

Officals expect to start placing orders for machinery in about 30 days and to have the plant in full operation processing vegetable oils by the first half of 1957. About 300 men and women will be employed there.

Commenting on Humko's other plans for the future, Humphreys indicated the firm is contemplating further expansion, possibly with a plant on the West Coast.

The HumKo Co. was founded in Memphis in 1930. It manufactures shortening, salad oils and vegetable oils used in the manufacture of margarine. Since 1952, the HumKo Co. has been a wholly-owned subsidiary of National Dairy Products Corp. of New York.

Conference Told of New Treatment for Cotton

Cotton and chemistry can combine to produce vastly improved tents, awnings, tarpaulins and other outdoor fabrics and to protect a 175,000-bale market for cotton which is being eyed covetously by synthetic fiber manufacturers.

W. Norbert Berard of USDA's Southern Regional Research Laboratory at New Orleans described to the National Cotton Council's fourth annual Chemical Finishing Conference a process, still in the experimental stage, to triple the useful life of these outdoor fabrics. The meeting was held Sept. 20-21 at Atlantic City, N.J.

The process would enable cotton to meet the challenge of a new synthetic fiber and would also contribute to a material reduction of the estimated $75 million damage suffered each year by outdoor fabrics, mostly cotton, through weathering.

Berard told the representatives of cotton textile, chemical, and finishing industries and government and private research laboratories at the two-day meeting that he and his colleagues found that if cotton is first dyed with certain light-stable vat dyes and then partially acetylated it becomes unusually resistant to weathering.

A successful experiment to eliminate one of two steps now required to produce cyanoethylated cotton was described by A. H. Gruber of the American Cyanamid Co. research staff.

Cyanoethylated cotton, first described by its developers at the Institute of Textile Technology, Charlottesville, Va., at the 1954 Chemical Finishing Conference, takes on improved physical properties such as increased resistance to heat, abrasion and rotting.

Dr. John H. Dillon, director of the Textile Research Institute, Princeton, N.J., was chairman of the meeting, held annually to evaluate latest developments in the chemical finishing of cotton with a view toward commercial application of laboratory findings.

September 1 Cotton Report

A cotton crop of 12,873,000 bales was forecast by USDA on the basis of Sept. 1 conditions. This was 145,000 bales more than the Aug. 1 forecast. The indicated yield of 374 pounds per harvested acre is a record high, exceeding last year's by 33 pounds and the 1944-53 average by 95 pounds.

State	1955 Acreage[1] For Harvest	Sept. 1 Condition: Average 1944-53	Sept. 1 Condition: 1954	Sept. 1 Condition: 1955	Lint Yield per Harvested Acre: Average 1944-53	Lint Yield per Harvested Acre: 1954	Lint Yield per Harvested Acre: 1955 Indicated Sept. 1	Production[2] 500-lb. Gross Wt. Bales: Average 1944-53	Production[2] 500-lb. Gross Wt. Bales: 1954	Production[2] 500-lb. Gross Wt. Bales: 1955 Indicated Sept. 1
	Thous. acres	Percent			Pounds			Thousand Bales		
N. Carolina	463	74	77	80	334	319	352	492	364	340
South Carolina	715	71	59	72	312	288	312	692	501	465
Georgia	869	70	62	79	253	286	331	695	612	600
Tennessee	570	75	64	85	360	405	442	565	548	525
Alabama	993	70	59	85	286	298	396	908	728	820
Mississippi	1,679	73	65	86	341	384	457	1,693	1,571	1,600
Missouri	389	76	77	85	368	478	481	358	450	390
Arkansas	1,453	73	61	86	338	380	438	1,386	1,351	1,325
Louisiana	607	68	62	73	331	399	395	591	572	500
Oklahoma	807	63	45	77	160	151	205	390	293	345
Texas	6,649	70	69	75	188	245	278	3,388	3,940	3,850
New Mexico	176	88	94	87	500	743	627	217	316	230
Arizona	340	92	95	82	598	1,039	896	481	911	635
California	743	93	96	90	631	806	775	1,048	1,487	1,200
Other States[3]	61	—	—	—	283	367	376	47	52	48
U.S.	16,514	73	69	81	279	341	374	12,952	13,696	12,873
American-Egyptian[4]	41.1	—	—	—	357	589	510	29.6	42.1	43.7

[1] Preliminary.
[2] Production ginned and to be ginned. A 500-lb. bale contains about 480 net pounds of lint.
[3] Virginia, Florida, Illinois, Kansas, Kentucky and Nevada.
[4] Included in state and U.S. totals. Grown in Texas, New Mexico, Arizona, and California.

Moloney Member of Feed Trade Rules Committee

John F. Moloney, Memphis, secretary-treasurer, National Cottonseed Products Association, attended a meeting of the subcommittee on feed trade rules of the Grain and Feed Dealers' National Association on Sept. 12. The meeting was held in Atlantic City, N.J.

The committee recently was expanded to include representatives from a number of industries allied with the feed and grain trade.

"This subcommittee should be of great value to the feed trade," commented R. Hal Dean, subcommittee chairman. "It is the first time we have had virtually all of the important feedstuffs industries working together for a comprehensive and mutually satisfactory set of trading rules. The trade rules of the national association were set up in 1901 and for many years have served as the basic rules of the trade. They now will be more widely applicable to the greatly expanded feed industry."

Son of O.L. Peterman Wed

Verna Harrington and Robert Henry Peterman were married recently at the First Baptist Church at Lubbock and are now at home in Lubbock. The groom is a senior at Texas Technological College. His father is O. L. Peterman of Western Cottonoil Co.

How Kemgas Statifier Cuts Costs And Boosts Gin Production
Low Voltage Flap Control Faithfully Operates New Statifier
As long as the condenser delivers cotton to the slide, the Statifier responds with its controlled mist. Breaks or gaps in the batt release the control flap which automatically stops the mist. Very little water is needed for a 500-pound bale because a special MOYST wetting agent is used in the Statifier. This permits the slight moisture used to uniformly penetrate all of the cotton in the bale. Only one quart of this wetting agent is used in 100 gallons of water, costing between 1 and 2 cents per bale.
Write, Wire or Phone For Details Today!
Uniform Penetration With MOYST Agent
Experienced ginners everywhere know the advantages of moisture in baling cotton. It makes pressing simpler. It enables the press crew to keep up with the production of the largest gins. Losses from broken ties are practically eliminated and press repairs are at a minimum. Adding controlled moisture is no longer a problem. The Kemgas Statifier sprays an automatically controlled mist of "wet water"... 8 pounds or less to the 500-pound bale. The instant the batt of cotton comes from the condenser it tilts a metal control flap mounted across the lint slide closing a mercury switch that starts and controls the gentle mist spray over the batt.
The mist control systems operate by a 24-volt unit which complies with NEC requirements. 100-gal. tank is of heavy, 18-gauge, galvanized steel. The pressure pump is of bronze and stainless steel.
Available in 4 Automatically Controlled Models
KEMGAS COMPANY
P. O. Box 5007
POrter 2-2894 Lubbock, Texas

Margarine Sales Hold July Edge on Butter

Reports from U.S. householders in July, 1955, indicated they bought about 5 percent more butter and 10 percent more margarine than in July, 1954. This, according to USDA, marked the sixteenth consecutive month in which the purchases of butter were reported larger than in the corresponding months a year earlier, and the tenth consecutive month of larger purchases for margarine.

Total purchases of butter for household use during July, 1955, were estimated at 57 million pounds; margarine purchases were almost 84 million pounds. This represented a butter gain of three million pounds, and a margarine gain of seven million pounds.

The percentage of all families buying butter—44 percent—in July, 1955, was two percentage points above a year earlier; about 56 percent of all families reported purchases of margarine in July, 1955, compared with 53.5 percent a year earlier. There was no reported change from 1954 in the average size of purchase per buying family, while the frequency of purchase continued lower. Families buying margarine continued buying more per purchase but their frequency of purchase was down from that reported in 1954.

The average of prices paid for butter by consumers during July 1955 was just above a year earlier while margarine prices were reported lower. This change has resulted in a widening of the price spread between butter and margarine—a spread of 42 cents per pound this July compared with 39 cents in July, 1954.

Producer Group Chartered And Meets at Memphis

A charter has been issued to the American Cotton Producer Associates and an organization meeting was scheduled in Memphis Sept. 22 to elect officers and set up offices. The organization is designed to provide a single agency through which separate groups may speak for the cotton producer, its sponsors say.

Sponsoring organizations include the Delta Council, Tennessee Agricultural Council, Agricultural Council of Arkansas, Louisiana Delta Council Missouri Cotton Producers' Association.

Representatives from other sections of the Cotton Belt were invited to send representatives to the Memphis meeting.

Dr. Frank Jeter Dies

Friends in the crushing and ginning industry have been saddened by the sudden death of Dr. Frank H. Jeter, agricultural editor at North Carolina State College, Raleigh. Nationally-recognized for leadership in agricultural journalism, Doctor Jeter also was widely known as a speaker. He had addressed annual conventions of a number of ginners' and crushers' associations, including the 1949 meeting of National Cottonseed Products Association.

Surviving are his widow, the former Irene Annie Albert; three children, Mrs. William Black of Atlanta; Frank H. Jeter, Jr., of Forest City; Dr. Vernon Jeter of Plymouth; and five grandchildren.

Research Meeting Told Fats Essential in Diet

Fats are essential for normal functioning of the body and good health, Dr. Ruth M. Leverton, Oklahoma Experiment Station, said Sept. 20 at the annual Margarine Research Symposium in Chicago. National Association of Margarine Manufacturers sponsors the symposium.

Doctor Leverton asserted that, in the past, one-sided and incomplete evidence has attempted to brand fatty foods as the cause of overweight and as the source of large amounts of cholesterol, associated with a common type of arteriosclerosis.

Actually, Doctor Leverton said, obesity is caused simply by intake of energy-giving foods in excess of the body's needs, not by diets weighted too heavily with fats, protein, or any other single nutrient.

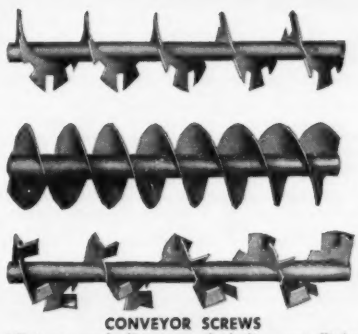
She added that there is convincing evidence to dispute the claim that cholestrol content of the diet is an important factor in determining the amount of cholesterol in the body.

Ranch Day Scheduled

Whether the drouth has ended and how to handle ranges following drouth will be among the questions discussed at the Ranch Day at New Mexico A. & M. College on Oct. 10. The event is sponsored jointly with USDA and the Forest Service's Forest and Ranch Experiment Station.

HAMMOND Conveyor Systems

BRING INCREASED EFFICIENCY—LOWER HANDLING COSTS



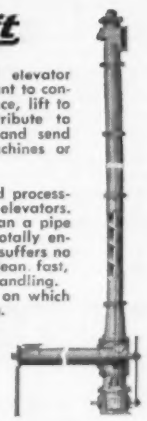
CONVEYOR SCREWS

All types and diameters, including cut flight, cut and folded flight, double flight, ribbon, etc. Internal couplings for smooth connections. Self supporting flights with uniform pitch and diameter for smooth power-saving operation.

Screw-Lift

This outstanding material elevator can be installed in your plant to convey horizontally any distance, lift to any practical height, distribute to bins or hoppers, reclaim and send material to processing machines or packaging.

In use in hundreds of food processing plants, also mills and elevators. Requires no more space than a pipe of comparable diameter. Totally enclosed, dust-tight. Material suffers no degradation or exposure. Clean fast, efficient. Eliminates man handling. Write for Bulletin M-500-2 on which you can outline your needs.

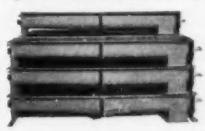


BEST BUCKETS

Available in standard and heavy gauges. "NU-HY" — "NU-TYPE" — "SALEM." Most famous names in the industry. Get more trouble-free capacity.

Hammond SCREW-VEYOR

For horizontal or inclined movement of bulk material. Screw operates in tube. Precision-built assemblies joined together by slip couplings and hanger supports. Always in perfect alignment — accessible — clean—dust-tight — noiseless.



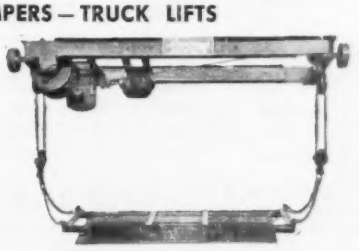
SHEET METAL FABRICATION

Modern design—skilled craftsmanship in Screw Conveyor boxes, spouting, gates, etc.

KEWANEE TRUCK DUMPERS — TRUCK LIFTS

HYDRAULIC TRUCK DUMPER

Built in 25', 45', 50' and 60' platform sizes to suit small trucks or tractor trailers. A big money saver — unloads the largest load in a jiffy.



OVERHEAD TRUCK LIFTS

Adjustable for driveways from 10' to 15' wide. Simple fool-proof construction.

Whatever your material handling job—we can help you. Write us outlining your needs.

Screw Conveyor Corporation

705 HOFFMAN STREET • HAMMOND, INDIANA

WINONA, MISSISSIPPI — SANTA CLARA, CALIFORNIA

HAMMOND ENGINEERED MANUFACTURED PRODUCTS

Classified Advertising

RATES AND CLOSING DATES: Ten cents per word per insertion. Include your firm name and address in making word count. Minimum charge $2.00. Copy must be in our hands by Thursday morning of week of issue. Please write plainly.

Oil Mill Equipment for Sale

FOR SALE—2 French screw presses, complete with motor starters, 5-high ring stack cookers, individual steam traps, pressure gauges, etc. Only about 50,000 bu. soy beans have been processed through each since new. May easily be converted to cottonseed crushing. $17,000 for both units. Present replacement cost about $52,000.—Fayette Soybean Mill, Fayette, Iowa.

OIL MILL EQUIPMENT FOR SALE—Rebuilt twin motor Anderson high speed expellers, French screw presses, stack cookers, meal coolers, fourteen inch conditioners, filter presses, oil screening tanks, complete modern prepressing or single press expeller mills.—Pittock & Associates, Glen Riddle, Pa.

FOR SALE—Complete six stand Continental cottonseed delinting plant, together with lint cleaner, downpack lint baler, motors, panels, Carver gummer, seed shaker, etc. Also necessary equipment to convert plant into a 50 ton cottonseed oil mill. —International Fertilizer & Feed Company, P. O. Box 62, Bakersfield, California.

FOR SALE — Filter presses; screening tanks; single and twin motor Anderson Super Duo expellers, with conditioners; several extra 36" cooker dryers and conditioners. All steel linter baling presses; 141-176 saw linters; seed cleaners; No. 153 separating units; bar hullers; lint beaters; stack cookers; rolls; hydraulic press room equipment.—V. A. Lessor & Co., P. O. Box 108, Fort Worth, Texas.

FOR SALE—Anderson Super Duo expellers, each complete with 14" conditioner and 36" cooker; 5 high 60" ball bearing rolls. 176 and 141-saw Carver linters. 72" and 85" cookers. Butters milling machine. Double box linter press. Filter press. Attrition mills. Single drum hull beater. 42" Carver hullers.—Sproles & Cook Machinery Co., 151 Leslie St., Telephone PR-5958, Dallas, Texas.

ELECTRIC MOTOR SALE!

Rebuilt and New Ball Bearing Motors

3/60/220-440/2300 Volts

H.P.	Type	Speed		Price
300	Slipring	900		$3500
200	Slipring	900	New	3152
200	Slipring	720		2368
150	Slipring	900	New	2590
150	Slipring	900		1566
200	Sq. Cage	900		1481
150	Sq. Cage	900		1188
100	Slipring	1200		1076
100	Slipring	900		1189
100	Sq. Cage	1200		758
100	Sq. Cage	900		879
75	Sq. Cage	1800		490
75	Slipring	1200		889
75	Slipring	900		991
75	Sq. Cage	1200		564
60	Sq. Cage	1800		356
50	Sq. Cage	1800		290

All Sizes and Types Motors Up to 800 H.P. in Stock. LOAN MOTORS AVAILABLE AT NO CHARGE.

Wholesale and Retail Distributors of
DELCO — GENERAL ELECTRIC — ACEC

W. M. SMITH ELECTRIC COMPANY

Lubbock	Dallas	Harlingen
POrter 3-4711	HUnter-2801	GArfield 3-6587

FOR SALE—One 5-high French rolls, plain bearings, in good condition. Operated two seasons after last grinding. One Allbright-Nell filter press, 30" square plates. In good condition. Price reasonable. Write—Fidelity Products Mill, P. O. Box 1189, Houston, Texas.

FOR SALE—One set French 5 high 60" B.B. flaking rolls. Carver Tru-Line gummers for 106-141-176 saw, belt or motor driven. Butters milling machine for 141 saw. 16 Continental metal 141 saw linters.—V. A. Lessor & Co., P. O. Box 108, Fort Worth, Texas.

Gin Equipment for Sale

FOR SALE—Cotton gins, oil mills, compresses and grain elevators. Contact M. M. Phillips, Phone TE5 8555, P. O. Box 1288, Corpus Christi, Texas.

FOR SALE—Gins: Several late model 80-saw Murray and Continental brush or air blast, or Lummus automatic. Feeders: 60" or 66" Mitchells in standard or super units, 60" L.E.F. machines or 66" Continentals with "V" belts. One 4-80 Lummus and one 5-80 Mitchell conveyor distributor. Steel Cleaners: One 4-cylinder and one 6-cylinder 50" Continental, one 5-cylinder 50" Hardwicke-Etter, two 6-cylinder 50" Murray, with "V" belts, one 7-cylinder 50" Wichita and two Lummus Thermos. Driers: Two Lummus Thermos, two Murray Big Reels and one practically new Continental two trough, with heater, and new towers in all sizes. Steel Bur Machines: One 10' Lummus with new bearings, brushes, saws and spreader box. Two 8-foot Murray with new bearings, brushes and saws. One 18-foot 12", and one 24-foot 9" rotary lifts. Steel Condensers: One 48" Continental side discharge, one 48" Lummus up-discharge, one 60" Continental up-discharge, one up and one down discharge 72" Murray. Steel Separators: Two 50" Continental with back-geared vacuums, one 50" Hardwicke-Etter, one 52" Murray "VS", one 48" and one 60" type "M" and one 48" type "C" Lummus. Steel Trampers: One Murray, two Cameron and one Continental E.J. Presses: One Murray PX missing some parts, one wood frame Lummus and one heavy duty steel bound Continental Paragon. Pumps: One Continental and one Murray heavy duty vertical triplex, one Lummus and one Murray horizontal triplex and two Beaumier 4-plunger horizontal. Electric motors in 7½, 10 and 100 h.p. Hundreds of other late model items of machinery and equipment for your selection. New cyclones and rock and boll traps. New Kemgas Statifiers. New fans which meet required specifications for pink bollworm trash and hull disposal. For your largest, oldest and most reliable source of guaranteed late model, used and reconditioned gin machinery contact us. Qualified graduate engineer to assist you with any of your machinery problems at no obligation. Call us regarding any machinery or complete outfits you have for sale or trade.—R. B. Strickland & Co., 13-A Hackberry St., Telephones: Day, 2-8141; Night, 3-7929, Waco, Texas.

FOR SALE—Two all-electric cotton gins right in the heart of irrigation, northwest of Lubbock. These plants will net from $75,000 to $100,000 annually. 90% irrigated territory, one of these gins brand new, costing $160,000 to install. Price $250,000; might be able to talk the owner down to $225,000. Owner retiring. This is a wonderful opportunity. Have other gins in irrigated belts, less price.—C. L. Lindsey, 2002 College Avenue, Lubbock, Texas, Dial POrter 5-7812.

FOR SALE—One 4-80 Murray gin. Practically new engine and bolling machines. The entire plant is in A1 condition. Building and all machinery is steel. Located in Central Texas in blackland. Reason for selling is other personal interests.—Box ER, c/o The Cotton Gin & Oil Mill Press, P. O. Box 7985, Dallas, Texas.

FOR SALE—Complete plant to be moved as territory now planted in flax. Located near Kenedy, Texas. Has not ginned over 8,000 bales. 5-70 saw stands, super cleaners, seed sterilizer with 80 h.p. boiler for steam, Murray bur machine, Fairbanks-Morse 100 h.p. diesel engine, 1000 gallon butane tank, wagon scales, Fairbanks-Morse seed scales. Also corn crusher.—August Loos, 1123 Kayton Ave., or phone Lehigh 2-6757, San Antonio, Texas.

FOR SALE—One 14' Lummus bur machine. Factory guarantee still on machine. V-belts. Machine ginned 10 bales, $2750. One cleaner, 5 drums, blow in, like new, $600.—Box HK, c/o The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas, Texas.

CAN now make prompt delivery of electric cotton samplers. Order yours immediately. Price $145. —Bill Smith, Box 694, Phones 47847 and 49626, Abilene, Texas.

Equipment Wanted

WANTED—All types of meal coolers, dehydrating drums and hammermills 150 h.p. and up.—Box MM, c/o The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas, Texas.

WANTED—Two used 60 inch cyclone dust collectors. Send details and price.—Kling Seed Co., 901 Rockford Rd. SW, Cedar Rapids, Iowa.

Personnel Ads

WANTED—Southeastern oil mill wants a superintendent. Must be capable, sober, and steady worker. Apply giving experience, age and references.—Box PH, c/o The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas, Texas.

Power Units and Miscellaneous

FOR SALE—Farmachine manure spreader on early '55 two ton long wheelbase Chevrolet truck. Capacity burs from 9-10 bales run thru one fan. Uses L.P.G. or gasoline. Two speed rear axle P.T.O. forward and reverse. Run about 5000 miles. Total cost $4700-plus. Price $3790.—C. L. Curlee, M. D. Box 696, Sinton, Texas.

FOR SALE—New and rebuilt Minneapolis-Moline engines, from 35 h.p. to 220 h.p., call us day or night for parts and service.—Fort Worth Machinery Co., 913 E. Berry St., Fort Worth, Texas.

FOR THE LARGEST STOCK of good, clean used gas or diesel engines in Texas, always see Stewart & Stevenson Services first. Contact your nearest branch.

FOR SALE—4, D13000 Caterpillar diesel engines on skid rails, clutch and outboard bearings. 1, D17000 with skid rail and outboard bearings. One 340 h.p. twin six General Motors diesel, one 210 h.p. twin six gas or butane Minneapolis-Moline. Several electric motors, ranging in h.p. from 40 to 150, 3-phase, 440 volt.—Bill Smith, Box 694, Phones 47847 and 49626, Abilene, Texas.

Sesame Bulletin Issued

"Improvement of Sesame" is the title of Bulletin No. 4 issued by Texas Research Foundation, Renner. Dr. Earl H. Collister is the author.

Electric Motors

Sales
. . Repair

ACEC
Westinghouse
Delco
Crocker Wheeler

- Call us anytime—day or night, anywhere—and we will deliver a loan motor to your plant via one of our standby trucks and pick up your equipment for repair.

FOSHEE ELECTRIC CO.

203 S. Main **Fannin 9308**

FT. WORTH, TEXAS

• World Peanut Crop Continues Large

ANOTHER near-record world peanut crop is in prospect for 1955, following record productions in 1953 and 1954, reports to USDA indicate.

Increased domestic and foreign demand is expected to stimulate production in India and China; and, with favorable weather, output in Africa is more likely to approach the record high of 1953 than the lower 1954 crop.

U.S. production should be larger this season than last, unless bad weather curtails yields; and Brazil expects a slightly larger harvest.

Foreign Agricultural Service, USDA, now estimates that the 1954 harvest totaled 11,700,000 tons of unshelled nuts. This was approximately equal to the 11,735,000 tons harvested throughout the world in 1953, exceeded the prewar average by 20 percent and was eight percent above the immediate postwar average.

• **U.S. Imports Rise** — Drouth and other factors which dropped the U.S. crop last year to 521,780 tons (the smallest since 1934) have reduced domestic supplies and stimulated imports.

With the only peanuts available for crushing consisting of those not suitable for edible purposes, about 15 million pounds of peanut oil may be produced in the U.S. in 1954-55 compared with 84 million a year earlier. Because of this reduction, imports of oil may total 20 to 40 million pounds. Imports from Sept. 1, 1954, through March 31, 1955, amounted to 16.8 million pounds. Peanut oil is subject to an import duty of four cents per pound. A 25 percent ad valorem fee is imposed on imports in excess of 80 million pounds.

Mexico, which currently is shipping many peanuts to the U.S., produced about 88,000 tons last year, 8,000 more than in 1953. Mexico in 1954 exported the equivalent of 28,767 tons of unshelled peanuts, 80 percent of the total going to Canada.

Exportable supplies in Mexico in 1955 are estimated at 46,200 tons, unshelled basis. Trade sources recently said, however, that only about 10,000 tons were available for export to the U.S.

• **India Produces More Oil** — Asian peanut production last year was 7,790,000 tons, six percent more than the previous year, with 4,281,760 tons of the total produced in India.

More than three-fourths of the Indian output is crushed for oil, and peanut oil production is estimated roughly at 690,000 tons in 1953 and 900,000 in 1954. Oil output in 1955 may be around 940,000 tons, USDA estimates. It is believed that about 80,000 tons of peanut oil may be available for export this year. This would compare with exports of 17,190 and 31,002 in 1954.

China appears to be exporting substantial quantities of peanuts, despite the fact that production has been well below the prewar average. Bulk of the 1954 shipments of peanuts of 250,000 tons through the Suez Canal is believed to have come from China.

• **South American Crop Down** — South America harvested about six percent fewer peanuts last year than in 1954. Argentina, which had been increasing its peanut output steadily, showed a decline from 224,870 tons in 1953 to 184,415 in 1954.

Stocks of peanut oil in Argentina at the end of the past season, March 31, 1955, were placed at only 16,000 tons compared with 66,000 tons a year earlier.

Brazil, which exported practically no peanuts or oil in 1954, may produce 187,000 tons of peanuts or more in 1955; and now has an exportable surplus of about 38,600 tons of shelled peanuts. Early in May, the Brazilian government authorized exports of 44,000 tons of peanuts and 33,000 tons of peanut or cottonseed oil.

• **African Crop Smaller** — Eight to 10 percent decrease in peanut production was reported by Africa in 1954, with the volume tentatively estimated at 2,820,000 tons. Most African countries will make limited exports of peanuts and oil, chiefly to Europe.

Pink Bollworm Operations Resumed in Mississippi

Mississippi State Plant Board has reestablished inspection stations to prevent the entrance of the pink bollworm. Stations are maintained at Mississippi River bridges at Greenville, Vicksburg and Natchez. Mississippi also is one of the states cooperating with the research program conducted jointly by USDA, states and the Oscar Johnston Foundation. Mississippi appropriated $50,000 for pink bollworm research for two years.

MOSS → → delivers..

50% more in SLM or BETTER GRADES

than far more expensive Overhead Cleaning Equipment!

HERE are the 1954 ginning records of grades for two gins located about 25 miles apart. Both are in the same cotton producing area in the Mississippi Delta. Approximately 65% of the cotton ginned in each plant was hand picked. *Note the great difference in SM and M grades!*

GIN "A"	GIN "B"
1—Big Reel Drier	1—14 Shelf Tower Drier
2—24 Shelf Tower Driers	1—3 Drum Mitchell Cleaner
2—14' Burr Machines	Super Gems with hot air
2—72" 7 Drum Cleaners	Super Mitchells with hot air
Super Mitchells with hot air	4/90 Gins
4/80 Gins	Moss Lint Cleaner

Overhead Cleaning		Moss Lint Cleaning
1.8%	SM	21.5%
17.0	M	21.2
38.2	SLM	43.0
38.0	LM	12.7
4.0	SGO	1.2
1.0	GO	0.4

IT'S performance like this that has made Moss Lint Cleaners the Number One choice of top ginners everywhere! A Moss is low in first cost, easy to install and economical to operate. There's a Moss model specifically designed for *your* gin, regardless of type or size. It will pay you to investigate! Write now for complete information.

MOSS-GORDIN LINT CLEANER CO.

3116 Main Street
Dallas, Texas
Third Street & Ave. Q
Lubbock, Texas
1132 S. Third Street
Memphis, Tennessee

• Sheep Supply Material For Hormone Study

THREE HUNDRED SIXTY thousand sheep were used to help supply material for one of the most vital advances in the field of hormones, American Meat Institute points out.

The anterior part of the pituitary glands of the 360,000 sheep were used to extract one-fourth of an ounce of crystalline ACTH. This medicine, first developed by a meat packing house, helps regulate the body processes in treatment of certain physical conditions in human beings. Scientists now know the positions of all 39 amino acids in the ACTH molecule. With that knowledge, it is hoped they will be able to find the active amino acids and synthesize them and the hormone itself.

Automatic Sampler School Held in California

A service school was held Sept. 20 at Delano, Calif., for the personnel of gins that are using the automatic cotton sampler manufactured by George F. Haddican, which has its general office in Delano. Representatives of manufacturers of various parts of the sampler gave instructions on the operation and maintenance of the products.

Fourteen cooperative gins in California are among the gins that have installed the equipment; and the manufacturer, George F. Haddican, discussed the equipment in a talk at the recent annual meeting of California Cotton Cooperatives, Inc.

USDA recently issued a report on the advantages of automatic bale sampling and announced the installation of a sampler at a North Carolina gin for commercial use. A photograph of this sampler appeared in The Press on Sept. 10.

Take Farming-Fishing Tour

A farming-fishing tour of the Gulf Coast area of Texas and Mexico was completed recently by 144 cotton producers who are members of cooperative gins on the South Plains.

The tour was sponsored by Plains Cooperative Oil Mill, Plainview Cooperative Compress, Farmers' Cooperative Compress and Plains Cotton Cooperative Association. Purpose was to provide relaxation and firsthand information about cotton production in the area.

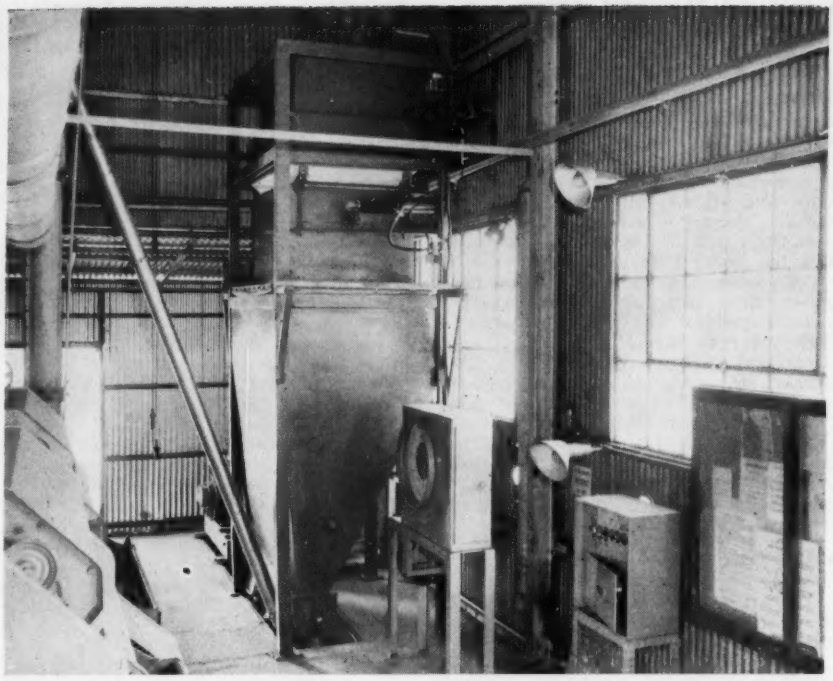
Damage Slight at Gin Fire

A fire, Sept. 11 at the Minden Compress Co., Minden, La., believed to have started from a fire-packed bale, did slight damage to several hundred bales.

The cotton was stored with 300 to 350 bales per block. The fire was confined to the block of origin, making it possible for four sprinkler heads fused to extinguish the fire. It is believed that 40 percent of the damaged cotton can be salvaged.

Receives Driving Award

Roy Pringle, truck driver for Western Cottonoil Co. at Abilene, Texas, has received a Knights of the Road award, with letters of congratulation from the Governor of Texas, Department of Public Safety and others.



A HOPPER TYPE SCALE, shown here, has been installed at the Dairyland Gin of Producers Cotton Oil Co. in California, as a result of research described in the accompanying article.

New Product

CALIFORNIA GINS INSTALL COTTONSEED SCALES

Two new types of cottonseed scales have been installed at gins of Producers Cotton Oil Co. in California as a result of research started last year, Edward Fischer, field manager, has announced. Grant Yost, technical ginning specialist, and Macon Steele, gin maintenance superintendent, travelled extensively to study different types of scales .

One scale was installed at the Producers' Dairyland Gin and the other at Producers' Sierra Gin. The Dairyland installation utilizes the Hopper-type scale. After the seed cotton has been ginned the seed is dropped into a screw conveyor and transported to an elevator that delivers the newly processed cottonseed to the Hardy Automatic Scale.

The hopper of the scale has a thousand pounds capacity. When the hopper is filled it automatically empties into a feed-out hopper and the weight is recorded on a weight ticket. On amounts of seed that weigh less than a thousand pounds the hopper weighs out the exact amounts and empties the seed. The total seed from any given amount is forwarded to be applied toward a grower's seed credit.

The Producers' Sierra Gin installation applies the conveyor-type scale. This type of scale is able to weigh a substance as it is being transported to storage. The cottonseed travels its normal direction with the inclusion of the conveyor scale, which is a part of the movement machinery. The poundage is constantly before the ginner on an integrater (or automatic printer) and furnishes him with a running total at all times. When the seed from a given load has traversed the conveyor and the seed ceases to flow, the weight is recorded on a weight ticket and then forwarded to become a growers credit.

Fischer stated that the problem of accurately weighing seed has been studied by Producers for some time. These two scales are forerunners of apparatus that expected eventually to be integrated into existing cotton gin equipment. However, it is pointed out that both scales are experimental and have not been sealed by the county sealer of weights and measures. To date, there have been no seed scales in California sealed. The scale manufacturers and Producers' Cotton Oil Co. are working with the sealer of weights and measures toward making these scales acceptable.

Vaughan Succeeds Atwell As Crushers' Director

S. J. Vaughan, Jr., Hillsboro, a past president of the Texas Cottonseed Crushers' Association and of National Cottonseed Products Association, has been elected to the board of directors of Texas Cottonseed Crushers' Association.

Vaughan was unanimously elected by members of the board to fill the vacancy created by the retirement from Southland Cotton Oil Co. Division of Anderson, Clayton & Co. of J. O. Atwell, Jr., Paris, Texas. Atwell was elected an honorary life member of the Texas Association by the directors when they accepted his resignation.

Tung Association To Meet

American Tung Oil Association will hold its twenty-second annual convention Sept. 29-30 at the Edgewater Gulf Hotel, Edgewater Park, Miss.

Officers are Marshall Ballard, Jr., Lumberton, Miss., president; L. O. Crosby, Picayune, Miss., and Otis A. Rosborough, Jr., Marianna, Fla., vice-presidents; and Roland R. Becke, Poplarville, Miss., secretary-treasurer.

Agricultural Workers Plan Convention in Dallas

Plans for the annual convention of Texas Agricultural Workers' Association in Dallas, Jan. 12-13, have been announced by R. F. Hartman, Corpus Christi, president. Sessions will be held at the Adolphus Hotel.

Fred M. Shaw, Renner, is vice-president of the organization of professional men and women in agriculture, V. S. Marett, Gonzales, is secretary and W. M. Burkes, Dallas, is treasurer.

Homer Gibbs, Dallas, is chairman of the general arrangements committee; Dr. T. R. Timm, College Station, is program committee chairman; Doyle Love and H. L. Gantz, both of Dallas, head the door prize committee; and Walter B. Moore, Dallas, is publicity committee chairman.

May To Speak at Texas Nutrition Conference

Monroe U. May, Southland Feed Mills, Dallas, president of Texas Feed Manufacturers' Association, will be among the speakers on the program at the Texas Nutrition Conference at Texas A. & M. College, Oct. 5-7. Dr. J. Russell Couch is conference chairman, and has announced a program of reports by research and feed industry leaders.

Mechanization Must Help

(Continued from Page 14)

Texas, was toastmaster at the banquet, and Dr. Kenneth McFarland, educational consultant and lecturer, was the principal speaker.

Lankart Seed Farm was host at lunch during the tour on Friday.

• **Three Things to Do**—Determination to fit increasing mechanization of cotton into the over-all problem of making the crop better able to compete and more profitable for the men who work with it was expressed by numerous speakers.

All agreed that it was a problem calling for aggressive action and teamwork; and probably all agreed with Director Louis E. Hawkins of the Oklahoma Experiment Station when he divided the research phases of the problem as:

"First, cotton as a raw material must be grown and delivered to the spinner at a lower net cost.

"Second, the quality of the cotton fiber must be improved and its physical characteristics must be more dependably standardized.

"Third, cotton fibers must be made more versatile in usability and their uses must be extended into more products."

To achieve these goals—to keep cotton competitive—is going to require the utmost effort on the part of everyone who is concerned with the production, processing and manufacturing of the crop and its products.

The thoughtful discussions at the ninth annual Beltwide Cotton Mechanization Conference pointed the way toward many of the things that need to be done and indicate how they can be done. Furthermore, the straightforward way in which industry leaders are facing up to the problem caused many who attended this conference to have a renewed faith in the industry's ability to solve its problems, as serious as they may be.

Other Nations Must Help Curtail Lint Surplus

All producing countries must cooperate if large, continuing surpluses of cotton are to be prevented, USDA Secretary Ezra Taft Benson said Sept. 10 at the meeting of the Federation of Agricultural Producers in Rome, Italy.

America is seeking to bring world cotton supplies into better balance by reducing acreage, he said. At the same time, acreage continues to expand in other areas and "markets once supplied by our own growers have been surrendered to other countries, Benson declared.

"Obviously, this situation can not exist forever," he said.

Better balance between supply and demand is the keystone of American policy, he declared, explaining that U.S. agricultural export policy is based on three principles:

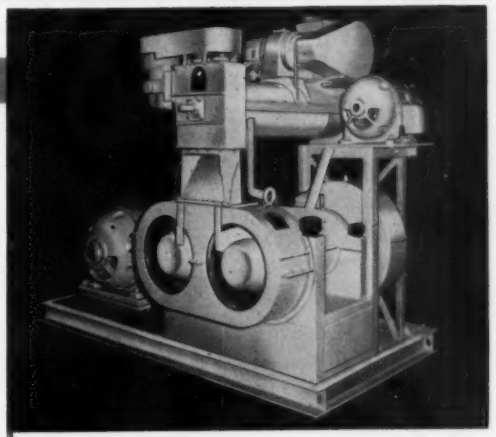
1. To compete fairly on the world market.
2. To be competitive in quality.
3. To participate in a mutually profitable international trade that gives our customers abroad the continuous opportunity to earn the foreign exchange they need to buy our products."

America's refusal to engage in "any cutthroat race for markets" and in dumping her vast surpluses has, in effect, supported world prices of some commodities, Benson said.

"At the same time, we have placed our own producers under rigid production controls," he declared.

NOW...

you can PRODUCE MORE PELLETS per dollar of cost with a NEW CYCLOPS All Purpose PELLET MILL



You're on the way to new profits, higher production and new efficiency with the all-new Cyclops Pellet Mill *built by Williamson.* Important changes in the new Cyclops give you more capacity with more economy.

THE NEW CYCLOPS PELLET MILL... HEAVIEST DUTY MILL MADE

- Pellets full range of materials from dry salt to high molasses feeds
- Die sizes from 3/32" to 3/4"—longer life dies
- Round, cubed or oblong pellets
- No steam for most applications
- Lubricate only every 5,000 *operating* hours
- Heavy duty Timken Super Roller Bearings on main die shafts
- *And the guaranteed long life of Williamson-Built Equipment*

Get full details on the modern way to make pelletizing pay! Contact John W. Williamson and Sons, Inc., 1545 South Greenwood Avenue, Montebello, California.

WILLIAMSON-BUILT

REPRESENTATIVE MATERIALS LIST

Solvent process meal
Cotton trash and burrs
Dehydrated materials
Molasses feeds
Minerals and supplements
Figs
and other economical feeds

WILLIAMSON

Conference Proceedings

(Continued from Page 35)

ton from the plant without uprooting the plant even where plants are not too well anchored in the ground. The uprooting of plants is one of the main problems encountered in using cotton strippers in the Southeast.

All roll-type strippers require pick-up or plant lifting fingers to slip under and lift low limbs and bolls up to where they can be collected. Finger-type strippers do not require limb lifting fingers as the points of the figers are operated low enough to catch all low bolls.

• **Plant Characteristics Affect Performance**—The Texas Station began studying the plant characters that affected the performance of the stripper-type cotton harvester in 1928, or 27 years ago. Some of the characters recognized and discussed at that time follow:

1. Height of the plant.
2. Length of fruiting and vegetative branches.
3. Height of branches above the ground.
4. Type of boll—strength—spread of bur sections.
5. Strength of the boll stem—(snapability).
6. Fluffiness of the locks.
7. Storm resistance.
8. Hairy condition of the leaf (pubesence).
9. Storm loss.
10. Earliness of maturity.
11. Grade and staple of the fiber.

These are today considered the main plant characters that affect the performance of mechanical cotton harvesters.

Prior to 1930, engineers working on the development of mechanical cotton harvesters found that their machines would perform well in some fields and localities but give a poor performance in other fields and localities. They apparently assumed that cotton was cotton regardless of variety and influence of soil and climate conditions.

Texas Station workers early recognized that different varieties had different plant characteristics and that the same variety would develop different characters when grown under different soil and climate conditions.

• **Storm Resistance** — Storm resistance is a desirable character for any method of harvesting and especially for machine-stripping. As cotton must be fully matured for machine-stripping, the harvest date is somewhat later than for other methods and the pre-harvest storm losses are often greater.

Varieties producing normal bolls with fluffy locks have greater storm losses than varieties that have bolls with compact locks held securely in the bolls. Varieties that drop only a small percent of the yield may be termed storm-resistant, but varieties that have the locks stuck so tight in the boll they cannot be blown out by normal wind are termed stormproof types.

A good storm resistant or stormproof type of cotton is desirable where cotton is to be machine-stripped and where high winds occur.

A good root system will aid in preventing the stripper from uprooting plants, as will a fairly thick stand of plants, which prevents a "limb crown" near the ground.

These plant characters influence the functional performance of cotton strippers. In 1954, the Texas rubber paddle rolls were used in the Brazos River Valley to harvest storm proof No. 1 cotton of three plant populations of 12, 24 and 37 thousand plants per acre. The field losses were 5.9, 2.9, and 2.6 percent, respectively. The losses for a single steel roll stripper were 7.1, 5.8 and 4.9 percent respectively. For a double steel roll stripper the losses were 10.7, 9.4 and 6.8 percent, respectively. The losses decreased as the plant population increased with each of the three types of stripper rolls.

At Lubbock, in harvesting Stormmaster cotton that was irrigated and yielding 2,100 pounds of seed cotton per acre, the field losses for the rubber paddle, double steel and single steel stripper rolls were 0.7, 1.2 and 2.5 percent, respectively. These losses are low in comparison to field losses for strippers in South Carolina and Alabama where losses are about 15 percent of the yield for less suitable varieties.

In the Far West, winds are moderate and rain seldom occurs, so water can be applied in quantities as needed to produce uniform plants and fibers.

The prevailing type of weather can either cook or freeze out the insects in some areas, while in other areas provide conditions to produce swarms of all kinds of insects that thrive on cotton.

Thus, the amount of cotton produced, the cost of production, and the market value of the fiber and seed are greatly influenced by the weather.

• **Fiber Qualities**—As the topography, soil types and the weather vary throughout the Cotton Belt, so vary the type and quality of cotton produced.

It is well known that raw cotton differs in staple length and maturity from early to late season, from year to year, from field to field, from good to poor soil and with the variety. Staple length is longer at the beginning of the season and shorter at the end of the harvest season.

The staple length of cotton grown in any one year is affected more by soil type, climate and varietal factors than by the method of harvesting.

During the three-year period 1943-1945 several varieties of cotton were grown at College Station and Lubbock. They were harvested by four methods: hand-picking, hand-snapping, machine-stripping and machine-picking. The conclusions were that the fiber properties and classers staple length were not appreciably affected by the method of harvest. The grade, however, was significantly affected. The hand-picked cottons averaged one to two grades higher than the other methods. The quality of the yarn manufactured was not affected by the method of harvesting, except for a slight lowering of the appearance of grade for the longer and finer fibered cottons.

• **Adaptability of Strippers**—Acceptance and use of the mechanical cotton stripper by farmers in certain areas of Texas and Oklahoma prove its adaptability in the Mid-Southwest. The stripper does not appear to be suitable for the types of cotton grown in the irrigated areas of the Far West. Strippers can possibly be introduced into the Southeast if done on a research-demonstration basis. It would be necessary to get a few gins to install equipment to properly handle the hand-snapped cotton.

• **Cost of Harvest**—Two weeks ago I attended the field day program of a prize winning young farmer, Clinton Harbers. The Harbers brothers, Clinton and Ted, invited farmers of Central Texas to their farm near LaGrange, to tell about and to demonstrate practices and equipment used in improving a 100-acre Blackland farm.

One piece of equipment demonstrated was a cotton stripper, harvesting defoliated stormproof cotton. Clinton stated that he and Ted were able to harvest their cotton with the stripper at a cost as low as $5 per bale. The cost of hand-snapping a bale is about $30. The quality of the stripped cotton was equal to that of hand-snapped cotton.

• **Conclusion**—It can be concluded from the above discussion that the mechanical cotton stripper is an economically useful machine for harvesting suitable varieties, when planted fairly thick on lands and under conditions that produce a medium height plant, where the fields are relatively free of weeds, and where gins are well equipped to handle rough harvested cotton.

An Analysis:

Stripper Harvesting And Lint Quality

BY DR. EARL E. BERKLEY, Houston, Director, Anderson, Clayton & Co. Fiber and Spinning Laboratory.

Cotton strippers were originally used to harvest the top crop and late-maturing cottons of the High Plains area. They are now used in many areas of Texas to reduce labor costs.

The main requirements for the stripper are that the cottons are short staple, 1 inch and less, and that the plants be defoliated. Bushy plants are not satisfactory for stripping; but if planted thick in the row, most cottons will produce erect plants.

Use of chemical defoliants in connection with stripper harvesting is a matter of serious concern. When the leaves are destroyed, growth rapidly comes to a halt; and when defoliation is done before the cotton is mature, there will be a certain percentage of immature fiber. This fiber will vary in cell-wall thickness from fully-mature, coarse fibers to extremely fine, thin-walled bollies. Since many of the short staple cottons are coarse when fully mature, there will be a wide range of fineness in each bale where defoliants are used on immature cotton. The major factor in fiber fineness of stripper-harvested cottons is cell-wall thickness. And in a given area of production such as West Texas, where the varieities are somewhat similar, the Micronaire readings indicate the degree of cell-wall thickness, or so-called "maturity," of the cotton. Cell-wall thickness varies with growth conditions, but is affected most by the degree of maturity. If the seed, and therefore the fiber, is injured by diseases, insects, frost, freeze, or by defoliation chemicals, the fiber will cease to grow. If the injury is early enough to catch a large percentage of the fiber immature, then the fiber quality is permanently impaired.

Fully-matured, open-boll cotton is usually uniform in fiber fineness, as meased on the Micronaire. In certain years, drouth or other certain climatic conditions influence the growth. Variations due to such conditions are not uncom-

mon, and although they cause some concern in delivering cotton on a contract specifying Micronaire limits, a merchant is able to give satisfaction.

When desiccants and defoliants are used before cotton is mature or where frost kills the leaves, there will be all gradations of fiber fineness on each plant. The extremely thin-walled, immature cotton will open up last and is usually avoided by hand pickers or even spindle pickers on the first harvest. But strippers gather all cotton in one harvest, mixing the fully-mature cotton with the bollies. In areas where coarse, short cottons are grown, therefore, there may be a gradation of from "below scale" on the Micronaire to 6.0 and above in the same bale. If these fibers are intimately mixed throughout the bale, an intermediate Micronaire reading will be obtained, but unfortunately the fiber from an entire boll or even a number of bolls may remain together to give wide variations in fiber fineness within the same bale. Such variations cause difficulty in delivering the cotton to a customer and likewise difficulties in spinning the fiber in a cotton mill.

At present market prices, there may be as much as 250 points difference between cottons with Micronaire readings similar to the coarsest and the finest fiber found in a given bale. If it is necessary to sell the cotton on the low readings, as is done in the case of grade and staple, a farmer could lose as much as $12.50 a bale on fineness alone by blending a portion of immature cotton with fully-matured fiber.

Now let's put ourselves in the position of a cotton manufacturer and see how desirable the short cottons are under present price relationships between staples. If we use Middling grade cotton, we would pay about 33.20 cents for ⅞ inch, 35.00 cents for 15/16 inch, 35.45 cents for 31/32 inch, 36.05 cents for 1 inch, 36.60 cents for 1-1/32 inch, 37.00 cents for 1-1/16 inch, and 37.50 cents for 1-3/32 inch. With current fabric prices, there would be a margin of cost for manufacturing of only 24.80 cents per pound for the osnaburgs using ⅞ inch cotton, whereas there is a margin of 39.40 cents for 1-1/32 inch cotton, 73.00 cents for 1-1/16 inch, and 120.50 cents for 1-3/32 inch and longer staples.

At present labor costs, it is quite obvious that cotton mills would have difficulty spinning and weaving cottons into fabrics at such narrow manufacturing margins as shown for short cottons. Commercial differences give slightly wider margins at the short lengths, but merchants and mills must compete with loan prices in order to get the cotton. They must therefore use spotted, tinged or grey cotton in order to meet market demands.

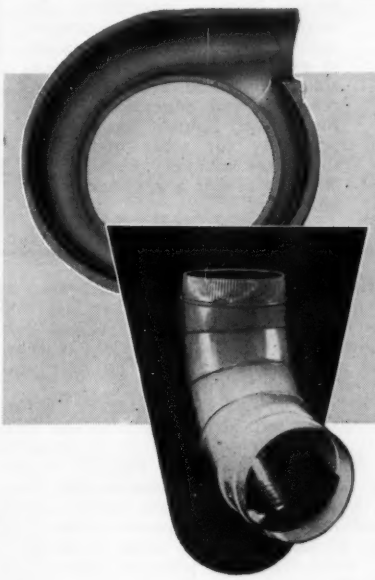
Although there are several million bales of cotton in the loan, there is a shortage of medium staple cotton in the 1-1/16 inch staple length range. This shortage is due, in part, to the excess of short staple cottons produced in the 1954 crop, but it is also influenced by loan prices.

The cotton put into the loan from the 1953 crop showed little or no bias due to selection for staple length. The excess of short staple produced that year, however, did influence the staples going into the loan from the 1954 crop. Cotton going into the loan in 1953 was from the Central Belt as well as from Texas, whereas that going into the loan in 1954 was primarily from Texas and Oklahoma. As of July 15, 59.4 percent of all the cotton in the loan from the 1954 crop was Texas cotton and 65.5 percent of it was Texas-Oklahoma cotton. About 43.3 percent of the cotton from other areas that went into the loan was taken out again, whereas only 7.9 percent of the Texas cotton was removed, leaving 92.1 percent of it still in the loan as of July 15.

It is possible that other factors than staple length played a part in the types of cotton going into the loan. The officials administering the loan do not differentiate between fiber properties within grade and staple. Weak, fine cotton sells at a lower price on the market than medium to coarse, strong fiber and, therefore, should have a tendency to go into the loan where it brings the same price as better qualities of the same grade and staple.

A study of fiber properties indicates that the Texas High Plains cotton is, in general, weaker and finer than that from other areas. Many mills specify the Micronaire readings in their contracts and certain of them measure the low side of the bale in accepting the cotton. This throws a large percentage of the defoliated and stripper-harvested cotton from Central and North Texas and Oklahoma into the low Micronaire range. Since the government loan does not differentiate between the fine bales and the coarser cotton of the same grade and staple, the farmer is inclined to ask for a loan on the finer bales.

• **Cotton Is Being Hurt** — These unbalanced prices due to high loan sup-

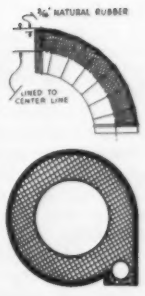


CUT DOWNTIME WITH RUBBER

From California to Georgia ginners are turning to rubber to save hours of downtime and dollars in lost production. The new Rockhide rubber lined elbows are fast becoming standard equipment in progressive gins from one end of the cotton belt to the other. In every cotton-growing section these rubber lined elbows are saving their price in replacement cost plus thousands of dollars by drastically reducing downtime. Rockhide Elbows are made in standard sizes of 20 gauge black iron. A quarter inch of tough, abrasion resistant rubber is fused to the heel half of the elbow and guaranteed never to come off. It starts in the bead in the intake end and extends smoothly over the crimp in the discharge end, giving full protection from one end to the other. Installation is the same as any galvanized elbow.

Don't Throw Away Your Old Fan Scrolls!

Old Fan Scrolls . . . even if they have holes in them . . . can be made better than new. When lined with rubber they will outlast a new scroll many times. Write for price lists today or contact your nearest jobber.



Special angles, transitions and dust collectors also available.

Abrasion & Corrosion Engineering Company

P. O. BOX 3568 • AMARILLO, TEXAS

Call or write one of these jobbers for immediate delivery on Rockhide Conveyor Elbows.

The Murray Company of Texas, Inc.,
Contact our office nearest you at
Dallas, Atlanta, Memphis, or Fresno

Industrial Sheet Metal Company
2645 East Adams Street, Phoenix, Arizona

Anderson Bigham Sheet Metal Works
424 Avenue L, Lubbock, Texas

Duecker Bros. Belting & Supply Co.
4209-4211 Parry Ave., Dallas 10, Texas

A. M. Hassell Supply
1610 Beech St., McAllen, Texas

port tend to discourage the use of short cotton and cottons of low quality, and are now permitting mills not only to use rayon and synthetic fibers made in this country, but also to import synthetics from abroad. The loan differences must be adjusted to a more realistic level on the basis of both staple length and fiber properties; otherwise the consumption of cotton in this country will be materially reduced from its potential level.

Cotton mills abroad are able to buy cotton three to five cents per pound cheaper than mills in this country. Once the mill owners and the mill workers all realize what this is doing to them, they will ask for a revision of some sort. That revision may mean a reduction in loan price for short, weak, fine cottons. If it does, many Texas farmers will receive considerably less for their cottons than producers from other areas unless they grow longer staples where possible and cease to defoliate the cotton before it is mature. Frost already takes a greater quality toll than we would like—without adding to the chaos with artificial frost just because the loan price will permit it. There will, no doubt, be a reckoning sometime in the near future.

The dissatisfaction in mills abroad with weak, fine cottons tends to drive our export customers to other growths even when there are no differences in price. Furthermore, as the acreage here is restricted, new areas abroad tend to plant cotton to offset the loss in production here, so that the world supply does not diminish. Production outside the U.S. reached an all time high of 22 million bales in 1954. If the U.S. is to retain its leadership in the cotton world, the producers must retrieve the high standards of quality and keep American cotton in export markets. This must not be done at the expense of our domestic cotton manufacturing system, which is our major market.

It is more difficult to prescribe a cure after the patient becomes ill than a preventive to keep the patient well. In general, however, it is much easier to convince a sick person that he needs a cure than to keep him from going headlong into trouble when he feels well. Our cotton industry is ill and the export part of it will most certainly expire unless kept competitive with other growths. We have the best system of production in the world, but we must throw off outmoded practices and go forward faster than the producing areas abroad.

Should the standards for grade and staple and the loan prices all be modified to include fiber quality, as measured in the laboratory, it is possible that cotton mills could regain some of their markets and we would have a much greater security for the future. It's a question of whether we still have the pioneer spirit to the extent that we are willing to clear new ground in order to have a more fertile field of endeavor.

Needed: More Rhea Blakes In Cotton States

■ **"MORE RHEA BLAKES" are needed to encourage research and educational activities for cotton in every cotton-growing state. The head of a leading state research institution made this comment in a recent informal discussion. He explained that the National Cotton Council, under the leadership of Wm. Rhea Blake, its executive vice-president, cannot be given too much credit for the work that it has done to secure more national support for research and education.**

In all of the cotton states, in the opinion of this research leader, there's opportunity for similar active work by representatives from the cotton industry to assure increased state financial support and interest in more research and educational work for cotton. Sounds like an opportunity for some good man that lives in every Cotton Belt state to render a real service to his state!

Panel Discussion:

Irrigation of Cotton In the Rain Belt

Progress—By George B. Nutt, Clemson, Director, South Carolina Extension Service.

Research in cotton irrigation in the Rain Belt seems to stem from a study conducted in Mississippi during the period 1929-32. Yields were increased by flood irrigation two of the four years at the Delta Branch Station. It was concluded, however, that the yield increase was not economical over the four year period.

Almost two decades elapsed before interest in irrigating cotton in the Rain Belt was renewed. A few progressive farmers here and there started irrigating cotton during dry seasons and many of the experiment stations started investigations on several aspects of the problem. These include (1) when to irrigate, (2) weed control in irrigated cotton, (3) soil characteristics, affecting rate of irrigation, (4) adaptation of cotton varieties for irrigation, (5) fertilizer experiments with and without irrigation, (6) development of sources of water, (7) field layout, (8) improving equipment, (9) economics.

Arkansas, Mississippi, Alabama, Georgia, South Carolina, and Texas have shown the greatest interest to date.

Kyle Engler of Arkansas estimated there were 100,000 to 150,000 acres of cotton irrigated in his state in 1954. F. A. Kimbrough, Jr., of Mississippi estimated that irrigation of all crops in his state was 100,000 acres in 1954 and should be much more in 1955. South Carolina had 23,866 irrigated acres of all crops in 1954. Acreages irrigated in many other states were not available, but measured in terms of ponds constructed in 1954 and 1955 and the activity of sales personnel, irrigated acreage is definitely ascending. For example, there were 1,866 ponds constructed in South Carolina in 1954, bringing the total to 8,292. There may be temporary weakening of interest in irrigation for a time because of the very favorable moisture conditions in most areas of the South during the growing season of this year. Ivan D. Wood of Denver, Col., USDA Extension irrigation engineer, who has practically spent his life in irrigation endeavors, visited our section this year and commented that "irrigation is here to stay." History indicates that once irrigation becomes established in an area, it never disappears.

My personal interest in the field dates from 1946. Horticulturists and truck farmers had demonstrated the wisdom of irrigating high value crops. There were seasons when the success or failure of some crops depended on supplemental moisture applied at critical times.

It was evident that because of the high initial cost, irrigation would remain a limited farm practice unless it could be used profitably for a wide variety of crops. Corn was selected for yield tests in 1946 because it occupied more acres than any row crops in the state and the yield per acre was ridiculously low. Corn contests had shown the potential for very high yields under favorable conditions, which included ample moisture. Nine years research of irrigating corn show that it has paid and paid well to irrigate eight of the years. Net returns were $73.26 per acre, 1946-1954 inclusive.

• **Influence on Yields**—In 1953 we set up a cotton irrigation experiment which gave increases in yield ranging from 300 pounds of seed cotton per acre to 655 pounds, depending upon the amount of water applied. The maximum was obtained with a total of 2.6 inches of water applied in two irrigations. The criterion was when the cotton began wilting before noon.

In 1954 the yields were increased by irrigation from 670 pounds seed cotton per acre to 1,379 pounds, depending upon the amount of water applied. Maximum yield required 8.6 inches of supplemental water.

John R. Carreker, agricultural engineer, University of Georgia, conducted a survey on cotton irrigation in 1954 to obtain information for an article published in Plant Food Journal which showed research on cotton irrigation progress in South Carolina, Georgia, Alabama, Mississippi, Arkansas and Missouri. Some of this work dates from 1950. The average yields at seventeen locations in six states were 1,572 pounds of seed cotton without irrigation, 2,173 pounds with irrigation. An average increase of 601 pounds per acre — a half bale — cannot be taken lightly. If we must increase profits in order to offset the rising costs of production, I know of no other practice that offers such opportunity.

J. F. Dickerson and J. F. O'Kelly of the Mississippi Station commented, in reporting on varieties for irrigation, that "with a dry growing season like the summer of 1952 and with lint cotton selling for more than 30 cents a pound, irrigation, where possible, will be quite profitable. Total dollar value per acre resulting from irrigation ranged from a minimum of $62 to $134 for 12 varieties, indicating that varieties must be considered in irrigation."

It may be anticipated that irrigation will not pay every season. The Alabama Station reported a slight decrease from irrigating cotton in 1950 as did the Mississippi Delta Station in 1952. The decrease in Alabama resulted from heavy rains following soon after irrigating. In the Mississippi experiment, irrigation was limited to one application during a severe drought and was apparently deterimental to the plants.

Although yield is the principal yardstick for measuring the effects of irrigation, the following has been noted at Clemson and other locations:

1. There was considerably greater second growth following defoliation on the non-irrigated plots, with very little on the irrigated plots, indicating a better

use of fertilizer by the plants that were irrigated.

2. The staple length of cotton from all irrigation treatments was longer than from non-irrigated treatments.

3. The strength of cotton from irrigated plots tested slightly higher than non-irrigated cotton.

4. The fat and oil content of the seed from irrigated cotton was higher than from seed taken from non-irrigated cotton

5. Percent crude protein in seed was decreased slightly by irrigating.

• **Costs** — Several researchers, particularly engineers, have attempted to calculate irrigation costs. W. P. Law, Jr., stated in 1953 that "Irrigation costs vary greatly, depending on distance to water, amount of water used, operating-hours per day, operating pressure, and other factors. Overhead costs (interest and depreciation on equipment) figured at 12 percent on investment, generally vary from $6 to $18 per irrigated acre per year. Operating costs (labor and fuel) are generally well under $2 per acre-inch of water applied.

"Assuming that from two to six inches of water will be applied during the season, total cost of irrigation will be between $10 and $30 per acre exclusive of the cost of water."

The Mississippi Station reported in 1953 that the cost of irrigation in experiments varied from $32.15 per acre, where 6.75 inches of water were applied at State College, to $12 per acre at Stoneville for eight inches of water.

A sprinkler system was employed at the College; at Stoneville contour flooding was practiced.

Costs were calculated from a maximum of $5 per acre-inch where water was pumped from a well and applied by the sprinkler method to $1 per acre-inch where water may be pumped from a nearby lake or stream and flooded on the land.

Roy Garrett of the Texas Station estimated equipment and operating costs at $1.75 per acre-inch of water applied by the sprinkler method.

E. A. Kimbrough and J. F. O'Kelly of the Mississippi Station calculated total costs of applying 8.3" of water in the hill sections of Mississippi in 1954 at $25.15 per acre.

F. A. Kummer of the Alabama Station gives a range of $1.50 to $2.75 per acre-inch of water applied. This includes operating costs, labor and depreciation on equipment.

There is a degree of similarity in estimated costs for the different states. The expense of water was not included in most of the estimates. This may vary from nothing to a considerable figure if water must be impounded or obtained from wells.

The key to most proposed projects is the availability of water. Farmers are building ponds, digging wells and diverting streams in order to provide water for irrigation. In many cases the water supply is totally inadequate. I have seen ponds pumped dry in a matter of hours. It must be remembered that one acre-inch of water is approximately 27,000 gallons. It is generally agreed that 1 to 1.5 acre-feet or approximately one-third to one-half million gallons of water per acre should be stored to be on the safe side when the long dry spells set in. In areas of low rainfall, high evaporation, and excessive seepage, two acre-feet of storage should be provided. Wells should afford 8 to 10 gallons per minute for each acre to be irrigated.

The availability of effective insecticides has made irrigation of cotton more feasible. Practice has shown that irrigation delays maturity and the immature bolls must be protected to obtain maximum yields.

Given ample water, a system designed to meet the individual farmers conditions, a diversity of crops to justify the investment, and an intelligent operator, irrigating cotton in the rain belt should prove to be a profitable farming operation.

Physical and Biological Aspects—By Dr. J. R. Johnston, Amarillo, Texas ARS-USDA.

The cotton producer interested in irrigation must resolve two major problems before the finer points involved in irrigated farming can be considered. These are (1) water supply, and (2) land preparation.

Considerable attention has been given to water supplies for municipal and industrial purposes in the Southeast. Less attention has been given to water supply for agricultural use. Since the true significance of drouth in relation to crop production has become established in this area, it is expected that considerable effort will be directed toward firm supplies for irrigation. Many opportunities exist for the development of needed water supplies through use of underground aquifiers, and surface impoundment of runoff water. As demands for water from all quarters increase, the right to use water for va-

The New, Trouble-Free

ZEIG UNIVERSAL TRAVELLING TELESCOPE

"The Travelling Telescope That Will Travel"

FIVE YEARS OF PROVEN, TROUBLE-FREE SERVICE!

Here are some of the reasons it has given such outstanding performance:

- **No Slip Joint to Bind**
- **Rolls on Angle Iron Track**
- **Made to Order for Your Gin**
- **Roller of 2 inch Pipe — Sealed Ball Bearings**
- **Travels Full Length with Light Pressure of Finger or Hand**

Also, Complete Line of Gin, Oil Mill and Feed Mill Sheet Metal Products.
The Home of the Famous and Talked-about 18 Gauge Elbows.

Write for Illustrated Bulletin

ZEIG SHEET METAL WORKS

P. O. Box 673 HEARNE, TEXAS Phone 504

rious purposes will have to be established through legislation. The enactment of sound water legislation in many states is one of the most challenging problems confronting the agricultural and domestic economy of our nation.

Land and water management for maximum conservation of soil resources in high rainfall areas is a problem of no small magnitude, without the added impetus of supplemental irrigation. Good conservation practices, such as terracing, contour cultivation, and vegetative waterways are doubly important on sloping lands to be irrigated, since the additional water increases the erosion hazard.

• **Cotton Root System Important** — In striving for the maximum potential production of cotton per acre, it must be remembered that the production ceiling is established by the extent of the root system and how efficiently this root system functions in supplying water and nutrients to the above-ground portions of the plant during the growing season. It is true that other production factors such as insects, diseases and weeds, will interfere with attainment of maximum production unless these are controlled. Potential production of cotton from an acre of land is in proportion to the efficiency of the plant pump (root systems) in delivering water and nutrients to the manufacturing plant above the ground.

Soil condition is a critical factor in determining whether a plant will develop an extensive and efficient root system.

Any given soil has a number of properties which determine its productivity or its ability to deliver water and nutrients to the growing crop. Some of these are texture, structural conditions influencing water-air movement and root activity, water holding capacity, nutrient availability such as nitrogen, phosphorus, potash, calcium, etc. Soil scientists have made considerable progress in developing an understanding of the complex interrelationships between the various soil properties and their effect on plant growth. Much remains to be learned. Frankly, I believe the soil scientist has more unsolved problems today than he has ever had.

In considering some of these soil-plant relationship problems, it remains appropriate to emphasize the effects of soil condition on root growth and efficiency. Compacted soil layers at plow sole depth or tractor wheel depth is one of the very serious problems soil scientists and agricultural engineers must solve. Recognition of this problem over the U.S. is widespread. Satisfactory solutions must be developed if many of our soils are to remain productive.

The virtues of grasses and legumes for soil improvement and conditioning have been emphasized over and over. Considerable work has been done in measuring and characterizing the root systems of these soil conditioning crops. How much consideration has been given to the effects of these conditioning crops on the root systems of crops which follow in the cropping system? Most of the attention has been focused on how the following crops perform above ground in producing quantity and quality products.

P. E. Ross, working in the Lower Rio Grande Valley of Texas, found that cotton root systems growing under favorable soil moisture conditions will penetrate a good soil to a depth of five feet by early bloom stage. However, he found that 82.2 percent of the root system was in the top 15 inches of the soil. This root distribution was not greatly different in mature plants. Irrigated cotton was using only 15 to 18 inches of the soil profile effectively.

An active root system uniformly distributed through 36 inches of soil would provide a potential production ceiling considerably higher than the root system active in only 18 inches of soil.

Ross has also done some preliminary work on the relationships between soil condition and moisture use by cotton in the Lower Rio Grande Valley. Soil moisture use patterns under continuous cotton and cotton-after-alfalfa indicated that the cotton-after-alfalfa used soil moisture more efficiently than the cotton-after-cotton. This increased water use efficiency was the result of several factors, such as: greater absorption of rainfall and irrigation water at lower depths; greater root growth and activity at lower depths resulting from improved soil structure; and better plant nutrient status throughout the profile following the deep-rooted legume crop.

Much work remains to be done with the effects of soil conditioning crops on the development and performance of root systems in relation to cotton production before maximum production potentials can be established for the many soils where irrigated cotton can be grown.

• **When to Irrigate—How Much Water**— If the cotton irrigator is to keep the plant root system operating at full capacity, he must know when to irrigate and how much water to apply. Considerable research has been done and is being done on these problems. Much further work will need to be done before the irrigated cotton producer will be able to use his water supply efficiently for maximum production.

The capacity of a soil to hold moisture readily available for rapid growth is highly important in the design of an irrigation system and in developing water application procedures. It is possible to determine the amount of total available water a soil can hold in the active root zone by laboratory techniques. Additional information is needed, however, regarding the amount of this water which is readily available for the maintenance of rapid crop growth.

Dale R. Shockley has summarized irrigation and soil moisture data in the Western States. He, and many co-workers, proposed a procedure that gives guidance in determining when to irrigate and how much water to apply for high water use efficiency and rapid, continuous crop growth.

These workers found, from an evaluation of all the available moisture-extraction data, that practically all irrigated crops had a common moisture-extraction pattern even though the soil varied widely in texture or depth. The pattern which developed indicated that of the total moisture extracted from the soil by crops, about 40 percent came from the upper quarter of the root zone, 30 percent from the second quarter, 20 percent from the third quarter, and 10 percent from the bottom quarter.

This 40-30-20-10 pattern of total readily available moisture (TRAM) can be illustrated by using as an example a Brazos Valley soil near College Station, Texas. This soil has a total available water (TAM) capacity in 4 feet of 4.99 inches of water; it has a total readily available moisture holding (TRAM) capacity of 3.06 inches of water. When 3.06 inches of the total available water of 4.99 inches has been used by a cotton crop from this four-foot profile, essentially all of the available water is gone from the top foot of soil and unless replenished immediately the roots in this layer will cease to function; in fact, their efficiency may be lowered rapidly when the available water in this zone goes below 25 percent of its total available moisture capacity.

The cotton farmer will need to irrigate before any portion of the root system, particularly the one- to two-foot zone where a heavy concentration of roots are, becomes inefficient in supplying water and nutrients to the plant. There are several methods for deciding when the available moisture in the most critical root zone layer is about exhausted: electrical resistance blocks, and the feel and consistency of the soil, are most commonly used.

One interesting possibility in learning when to irrigate is represented by research being done at College Station, Texas. Scientists there are studying the interrelationships between factors involved in consumptive use of water by plants so irrigation applications may be timed properly for maximum efficiency and rapid crop growth.

Factors under study are: stage of crop growth, soil moisture content, soil temperature, air temperature, humidity, and air movement. One of the objectives of this research is to develop a formula which can be used by an irrigator in determining when to apply water. When this technique is perfected and ready for use by irrigators, much of the guesswork will be taken out of when and how much water to apply for maximum crop growth.

Another interesting approach to the problem of when to irrigate is being studied by Bloodworth and associates in the Lower Rio Grande Valley of Texas. This consists of measuring plant processes related to the amount of moisture being supplied the plant from the soil. The rate of moisture movement in the plant, measured by a thermoelectric technique, is being studied. Under laboratory conditions the rate of water movement in cotton stems is directly related to the available moisture content of the soil.

• **High Fertility Need** — Still following the theme that the maximum production potential for irrigated cotton is dependent upon the extent and efficiency of the root system in supplying water

Conference Comments:

"Today, one of cotton's primary responsibilities is to keep the mill man sold on the fiber and its future."—ROBERT C. JACKSON, American Cotton Manufacturers' Institute, Washington.

and nutrients to the above-ground part of the plant, it is essential that sufficient plant nutrients are present in the soil in available form for maximum production.

Nitrogen is the most universally limited plant nutrient in agricultural soils. This is particularly true in the Southeast. Lack of readily available phosphorus and potash limit plant growth on many soils. An adequate supply of readily available nitrogen, phosporus and potash, as well as soil moisture, is essential if maximum yields are to be obtained. In the Mississippi Delta, studies show that 120 pounds of nitrogen fertilized per acre were not sufficient to attain maximum yield. Perhaps another 30 to 80 pounds of nitrogen would have been profitable.

Since it has been pointed out that improved soil structure and good soil condition is essential for the development and functioning of the cotton root system, and since soil conditioning crops are the best tool a farmer has for getting his soil in good shaps, it seems that considerable attention should be given the application of adequate amounts of fertilizer for maximum growth of these soil conditioning crops. The fertility added to the soil for growth of the conditioning crop would do double duty, i.e., it would encourage greater growth of roots and tops by the soil conditioning crop and the plant nutrients in organic form would become available to the cotton later during the growing season.

At the Blackland Experiment Station, Temple, Texas, it was found that phosphate fertilizer increased greatly the root and top growth of sweet clover. In addition to the improved phosphorus fertility status of the soil following the phosphated sweetclover, the 116-day-old sweetclover synthesized 172.6 pounds of nitrogen in the root and top growth.

• **Other Factors** — The progress made during recent years in the control of harmful insects in cotton has possibly produced more wealth for the cotton industry than any other one single factor. This does not mean, however, that we have no unsolved problems and opportunities for improvement in the future —particularly since irrigation tends to increase insect problems.

So far as weed control is concerned, it is doubtful that this problem in irrigated cotton production in the Southeast will be greatly different from that in nonirrigated cotton fields.

The development of control measures for cotton diseases has not been as rapid as that for insect and weed control during recent years. The luxuriant and heavy foliage produced under irrigated conditions encourages some diseases of cotton, such as boll rot. These diseases will have to be taken into account as we look to the future in anticipation of increasing the acreages of irrigated cotton in the Rain Belt.

The value of cotton defoliation in relation to harvesting operations has gained considerable momentum during recent years. The beneficial effects of defoliation on control of boll rot and aiding in the fight against insects is being recognized more and more each year. Defoliation problems under irrigated conditions will be more difficult, perhaps, than under nonirrigated conditions, primarily because of more foliage than ordinarily exists with nonirrigated cotton. One of the limiting factors in attaining maximum potential production from irrigation is the excess foliage produced and its relation to boll rot. One of the challenging opportunities to the defoliation chemist, and perhaps the plant breeder, is reducing the amount of leaf growth on the lower portions of the irrigated cotton plant so that sunlight may penetrate to lessen boll rot and hasten opening of the bolls. Such ideas as applying a chemical at the last irrigation for producing abscission layers on the old cotton leaves might not be as far-fetched as at first thought.

Many people have the idea that the cotton geneticist and breeder can develop just about any kind of cotton plant for specific purposes and situations. Professional people know that this is a false impression. Progress in cotton improvement is sometimes exasperatingly slow. Nevertheless, these people have many opportunities for altering several characteristics of the cotton plant to meet specific situations throughout the Cotton Belt. One of the greatest challenges the cotton breeder has today is for the improvement in quality of the fiber. There are many characteristics such as a stronger stalk, less foliage, a more extensive and efficient root system, which the irrigated cotton producer will be thinking about as he strives for greater production per acre.

• **Machinery Problems** — One of the general areas of problems and opportunities confronting the soil scientist and agricultural engineer is the effect of machines and heavy traffic on soil structural properties. Dense and impervious soil layers at the surface, at plow sole depth or tractor wheel depth, are some of the very difficult problems in this total mechanization and soil management field. Teamwork between the agricultural engineer and the soil scientist will be required if satisfactory solutions to these problems are developed.

The use of airplanes, improved ground equipment, and techniques for applying chemicals for various purposes through irrigation water present many opportunities in the future for increasing the efficiency in production of the cotton crop. There will be many modifications in basic machinery design to fit specific farm, soil, and climatic situations.

Machine harvesting of cotton produced under irrigation with 2 to 5 bales per acre yield represents a real challenge to our engineers. If the cotton grower is able to attain the maximum potential production of his land by good soil management, irrigation, control of insects, weeds, and diseases, permitting him to produce upwards of four to five bales of cotton per acre, he definitely will have a harvesting problem if he expects to do the job with machinery.

Economic Aspects—By Dr. Grady B. Crowe, Stoneville, Miss., Production Economics Research Branch, USDA.

Several factors have contributed specifically to a consideration of supplemental irrigation as a practice on cotton farms at this time. Among the more important of these are:

The relatively widespread drouth conditions which existed in cotton areas during critical growing periods of the last few years.

The generally improved capital position of farmers since World War II, which creates a favorable environment for venturing into the new and untried.

The generally favorable reports which have come from initial trials with the practice in humid areas.

Continued efforts on the part of producers to maintain production on a restricted land base.

The economic decision faced by the producer with regard to irrigation is no different from those faced with respect to any other production practice or technique. Essentially it must pass the time-honored test of effect on net farm income. However, since income is influenced by price, a factor over which the individual producer exercises no control, we would like to confine our considerations here to

Photo Courtesy Missouri Extension Service

Siphon Irrigation Demonstration

THIS TEMPORARY canvas dam is used to raise ditch water level for siphon irrigation. This picture was taken at the Southeast Missouri Field Day last fall.

irrigation as it relates to production.

Irrigation may be expected to affect production in a number of ways: (1) it may contribute to increases in production, (2) it may operate to reduce annual production variations, or contribute to yield stability, or (3) it may, through complementary effects on other production practices, result in both stability and an increase in the general level of production.

In attempting to appraise the impacts of supplemental irrigation on cotton production, I would like to divide the discussion into two broad areas: (1) The immediate effects of irrigation, where the practice is used primarily as a hedge against moisture deficiencies, (this in general would take place with little change in other production practice), and (2) The long run or potential effects of irrigation where adjustments can be made in the use of other production practices to take advantage of the fact that soil moisture is no longer a limiting factor.

Let us look for a moment at some of the farmer experiences with irrigation in the Delta of Mississippi last year.

Sources of Water — Water for row crop irrigation was obtained from both wells and surface sources in Mississippi in 1954. The most common type of well was equipped with a 10- to 12-inch pump powered by a 30- to 40-horsepower electric motor, and yielded approximately 2,000 gallons of water per minute. Such an installation cost roughly $5,000. The wells operated an average of 900 hours and were used to irrigate about 250 acres each. Investment in wells amounted to $20 per acre and pumping costs were 25 cents to 35 cents per acre inch.

Surface sources of water were used for irrigation with varying degrees of success. Where surface supplies are dependable and conveniently located they are naturally cheaper than wells. It must be remembered, however, that the dependability of a surface source is in inverse proportion to the number of producers who think it is dependable and are able to use it. Many streams in 1954 were pumped dry during periods of critical water needs.

Location, too, is extremely important. Where water is transported in pipes it takes an investment of $100 to $175 to move it 100 feet. Water was moved in some instances as far as 5,000 feet. The use of open ditches for transporting water results in high losses in loose, sandy soils. Water losses have been meaured in excess of 50 percent in a mile when transported in an open unlined ditch.

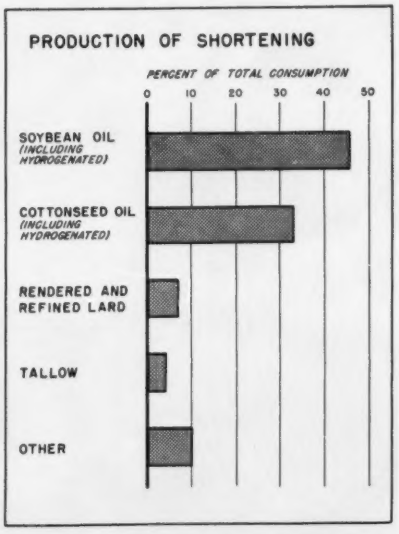
• **Application Methods** — Application methods used in the Delta included (1) sprinkler systems, (2) gated pipe, and (3)siphon tubes and similar methods of furrow irrigation. Investment in sprinkler systems ranged from $25 to $80 per acre and average $48. For gated pipe, the range was $20 to $65 and the average $43. Investment in other furrow irrigation methods was much lower, ranging from $2.50 to $30 and averaging $18.

The low investment reflected for furrow irrigation is somewhat misleading. Producers using this application method naturally select land which required the smallest amount of preparation. Further expansion in the use of this method will bring into use land that will require progressively more investment in terms of preparation. Where large acreages per farm are being prepared for furrow irrigation now, indications are that land forming costs will range from $10 to $80 per acre. This means, then, that in the early stages producers using furrow irrigation were substituting natural advantages in topography for capital outlays. With a sizeable expansion in irrigation, initial capital outlays for furrow irrigation will approach or even equal investments for sprinkler systems. Operating

FACT

for ADVERTISERS:

■ Your advertising message in this issue will be read by cotton gin and oil mill men in every cotton and oil-seed-growing section of every producing state—from California to the Carolinas and from the Gulf to the Canadian border.



Oils Used in Shortening

SOYBEAN OIL made up nearly half of all of the oil used in shortening during the calender year of 1954, the above Bureau of Census chart shows. Cottonseed oil accounted for over 30 percent of the total.

costs for furrow irrigation, however, appear to be considerably cheaper.

It should be pointed out here that drainage is also likely to be improved with this type of land farming and should bear some part of the cost.

Labor requirements per acre per irrigation ranged from 2.5 to 7 hours and average 4.0 hours, for sprinkler systems; for gated pipe the range was 4.5 to 7, the average 5.6 hours; and for other furrow irrigation the range was 2 to 8, the average 4.8 hours per acre.

Total costs of applying water per acre per application, including overhead costs, ranged from $7 to $15 for sprinkler systems and gated pipe. Both methods averaged slightly over $9. Costs for other furrow methods ranged from $2 to $7 and averaged $4.75 per acre. It might be pointed out that there is a good possibility that more water was applied per irrigation where furrow irrigation was employed.

These costs are high — in some cases extremely so. They represent all the inefficiencies that accompany the use of a new practice where knowledge is limited and preparation at a minimum.

It is interesting to note that the most important factor affecting labor requirements and costs, regardless of source of water or the application method, was the **planning** and **management** of the individual operator. This is evident from the fact that the more efficient operators using each application method had lower cost than the bulk of operators using any one method.

Using three applications of water with a sprinkler system at the above cost rates and taking into account extra costs for poison, harvesting and ginning, a yield increase of roughly one-fourth bale per acre would be required to offset the direct and associated costs of irrigation.

• **Farm Organization and Operation** — In order to examine more objectively the short-run effects of supplemental irrigation on farm organization and operation, I have taken a mechanized Delta plantation with 620 acres of cropland and budgeted two farm organizations, one with irrigation and one without.

The size unit was chosen because it is large enough to reflect a relatively high level of operating efficiency and should be representative of production situations in the alluvial areas of the Rain Belt.

Water for the irrigated farm will be furnished by a 2,000-gallon-per-minute well and applied with a sprinkler system. The sprinkler application method was chosen to overcome weaknesses in investment data discussed earlier in this paper.

The cropland organization on both farms consists of 225 acres of cotton, 100 acres of corn, 90 acres of oats and hay, and 185 acres of soybeans. On the irrigated unit only cotton and corn were watered. With present techniques there is considerable question as to whether less intensive, low-value crops such as soybeans will give sufficient response to be profitable under irrigation. Corn, too, may be a marginal crop for irrigation. It was irrigated in this case, however, because that could be accomplished without interfering with cotton irrigation and it offered the opportunity for further spreading some of the overhead costs.

As would be expected, the chief effects of irrigation are noticed in changes in investment for power and equipment, in operating capital requirements, in yields, and in expenses and returns.

The well and irrigation system for this farm required an investment of $17,000. This increased the total investment per acre of cropland from $370 to $400 per acre. Investment in cotton production equipment per acre of cotton rose from $142 to $222 per acre.

Estimates of yield increases attributable to irrigation, designed to reflect averages over a period of ten or more years, were 750 pounds of seed cotton and 25 bushels of corn.

Net returns to land and management rose from $20,000 on the non-irrigated farm to slightly over $30,000 on the irrigated unit. Comparing the non-irrigated to the irrigated unit, cotton production expenses per acre (including operating overhead) rose from $115 to $163, but net returns to land and management increased from $65 to $108 per acre. Returns to corn also improved with irrigation rising from $12 to $28 per acre. Net returns to land and management for the entire operation advanced from $32 to $51 per acre of cropland.

Problems and Potentials

In order to explore the potential effects of supplemental irrigation on cotton production it is necessary to depart entirely from the realm of well-tested propositions and proven conclusions. It now becomes a matter of careful projections and considered judgment.

• **Yield Stability and Risks** — One great obstacle to effective planning of agricultural production is the variability of output from given inputs. Ordinarily, a producer is not able to estimate the effects of a certain amount of input. He can only gross the limits within which

AFTER THE SALE
IS OVER . . . THEN WHAT?

Trouble-free operation for you is a lot more important to us after the sale. We do not "sell 'em and forget." Service after the sale is uppermost in Stewart & Stevenson operation. When you deal with Stewart & Stevenson you are assured of prompt, dependable service to get you back at work if trouble arises.

STEWART & STEVENSON SERVICES, INC.
Main Office and Plant: 4516 Harrisburg Blvd., Houston 11, Texas. Phone WAlnut 6-9691.
Branches: Corpus Christi, Dallas, Lubbock, Wichita Falls, San Juan, Odessa.
Representatives: San Antonio, Longview, Brownsville, Abilene.

STEWART & STEVENSON

belton superior bagging

the best protection against handling and weather

2 lb. weight—21 lbs. TARE
Open weave Jute Bagging
Pretested for uniform strength
Makes cleaner, stronger bales
"Built to Stand the Pressure"

BELTON BAGGING CO.
Belton, South Carolina

the response may occur. This situation makes him cautious in his attitude toward new practices. This is especially true if his supply of capital is limited in any way. If supplemental irrigation can reduce this uncertainty, and indications are that it can, it will have made a monumental contribution which will affect both the breadth and rapidity of progress in agriculture. Risk has long been a retarding factor in the acceptance of technological change.

Observations from three different cotton-yield tests in the Mississippi Delta over a three-year period indicate that nonirrigated cotton yields varied eight percent from the average while irrigated cotton varied only five percent. A similar test in Alabama covering three years shows a 35 percent variation for nonirrigated cotton compared to a two percent variation with irrigation. Corn yields in Mississippi varied one percent with irrigation, eight percent without.

• **Potential Farm Organizations** — We have seen the effect of irrigation on farm organization where the practice was used simply to correct moisture deficiencies. Now let us take a look at the real potential for irrigation — how it can be used to exploit the interrelated and complementary effects of all other production practices in growing cotton. It will mean completely revamping the production system for cotton. Deep tillage, plant populations, fertilization, insect control, disease control, weed control, and management will all have to be intensified in order to realize this full potential.

To illustrate these interrelationships let us look for a moment at the effects of deep tillage and irrigation on cotton yields. Mississippi studies in 1953 indicate that on soils where hardpan conditions existed, irrigation increased cotton yields by 285 pounds of seed cotton per acre. Deep tillage, to correct this hardpan condition, without irrigation, increased yields by 1,665 pounds. The additive effects of these practices amounted to a yield increase of 1950 pounds per acre.

On the same soil type, where no hardpan existed, irrigation succeeded in increasing yields by 715 pounds per acre. If we can assume that deep tillage was effective only in removing the hardpan condition, then the complementary effects of these practices reflect a yield increase of 2,380 pounds per acre, or 430 pounds more than the additive effects.

These tests further indicated that irrigation without insect control may actually reduce yields.

In addition to the budgets already discussed, one was prepared reflecting this potential situation. The same cropping pattern was used and the same crops irrigated. No account was taken of the possibility that acreages might have to be reduced further and alternatives substituted.

Investment under this potential situation rises to $420 per acre of cropland and investment in cotton production equipment soars to $258 per acre of cotton. The fact that total investment requirements for this operation are now in excess of $260,000 could become a real problem in capital acquirement. The fact that bankers are apparently trying to familiarize themselves with production under such situations in order to do intelligent financing is encouraging. However, any rapid shift in production in this direction would probably require far more capital than is now available in the area.

Under this situation, production expenses for cotton would amount to $208 per acre and returns to land and management to $200.

Corn returns would increase to $50 per acre and returns per acre of cropland to $89. Worker productivity would be increased tremendously.

• **The role of management** — The factor requiring the most intensification in this general scheme of things is management. Production problems in cotton today are beginning to turn more and more on management and the level of skills of labor. It is the considered judgment of production specialists that the application of "stepped-up" production practices would result in negligible returns if no improvement is made in management and labor. It is not enough that policy determinations and management decisions be correctly made. Improvements must also be made in application technique and job performance.

• **The Small Farm Problem** — Problems associated with irrigation on small farms simply serve to further intensify the problems posed by mechanization of these units. Data from both Louisiana and North Carolina indicate that investment per acre for irrigation is roughly twice as high for 10 acres as for 50. Operating costs are more than twice as high in the same comparison.

Given proper management and the necessary equipment there is little doubt that that some financial returns would accrue to irrigation. However, it is doubtful that many farms of this size could provide a living for a farm family and liquidate capital investment requirements.

A Broader Look

Many paradoxes may exist if anything like the potential just discussed is realized. Certainly the increased production provided through irrigation would be in effect a vertical expansion of acreage. Unless suitable market outlets are found for the increased production of cotton, further cut-backs in acreage would no doubt be necessary. In fact, cut-backs could be forced to such an extent that many of the efficiencies accuring to the practice would be lost due to poor distribution of overhead.

Drastic acreage reductions due to greatly increased production could also mean a complete reorganization of production patterns and a great need for new, or not yet known, alternatives.

On the brighter side, certainly the increased efficiencies growing out of irrigation would lower production costs and strengthen cotton's competitive position insofar as price is a factor.

Quality Preservation:

Fast-Growing Problem Must Be Solved

By J. Ritchie Smith, Memphis, Head Educational Services, National Cotton Council Division of Production and Marketing.

Several years ago, quite suddenly, the cotton industry began running a high fever from a malady that none of us could diagnose or describe very well.

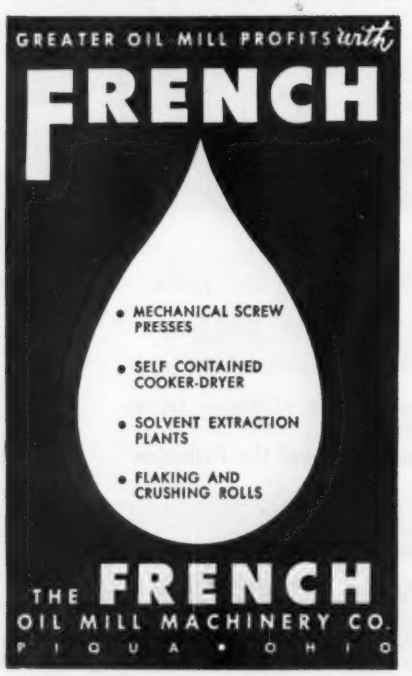
The symptoms showed up in the form of a great rash of complaints from spinners who were finding things in cotton that didn't belong there—things like tar spots, green leaf stain, honey dew, excessive trash, pieces of colored cloth, grease and oil, tangled-up knots of fiber, stencilling ink, and the like.

Spinners also said that cotton wasn't running through the processing machinery like it should—that they were having more trouble with neps and waste and yarn breaks—even though they were using the same grade and staple of cotton they had always used. The cotton **looked** the same, but it **wasn't running** the same.

Thus we had a two-sided problem—one side relating to lint contamination and the other side relating to actual fiber damage itself.

Complaints came so thick and fast we didn't have time to nail down one of

Enjoy a steady year 'round business
...install
KELLY DUPLEX
feed mill equipment
Plan now to cash in on the increased importance of grain.
Write today for our complete line catalog.
The Duplex Mill & Manufacturing Co.
Dept. CG, Springfield, Ohio



■ Brief . . . and to the Point

WILLIAM B. MURPHY, president, Campbell Soup Co., stressed the need for research to keep any industry in business in a recent address before the Investment Bankers of America. Pointing out how his firm benefits from research, he said:

> "Last year for example—a typical year—Campbell made over 50 separate improvements in its product formulas and procedures. These changes applied to 32 different products. Every product we make is materially improved over the corresponding product of 10 years ago—or is actually a brand new product."

them before there were a dozen others.

We would wipe out one cause of tar spots, only to find there were any number of others.

We would determine that a fiber could be made weak and wasty not only by **farming** practices, but by **ginning** practices and **spinning** practices as well.

Finally, it became obvious that we weren't going to accomplish much by chasing off and trying to treat each symptom separately. They were all related in one way or another, and we were going to need a really comprehensive remedy capable of striking at all of them.

We decided that the essential problem was this: A large amount of the built-in value of cotton was being lost before it ever arrived at the spinning mill. We had on our hands a problem of **quality** preservation—a separate and distinct problem from that of **quality improvement,** which can be handled only by the geneticist and plant breeder.

Quality **preservation**—preventing fiber damage and contamination—that was the problem. It was a highly complex, growing, problem. And cotton's fight for fiber markets underlined the fact that we must take forceful action to solve it.

One by one, the pieces have begun to fall into place in the cotton industry's program to preserve the full measure of the quality which has been built into its raw material. I want to give you an over-all picture of how the program is shaping up. This is appropriate for two reasons: First, because mechanization has intensified some old problems in quality preservation, and also brought us some new ones; second, because the various groups represented here have a vital part to play in making the program work out successfully.

Actually, as we all know, cotton has always suffered a large amount of quality damage in various stages of production, processing and handling. For example, we've known for half a century that our bale cover was inadequate—that it exposed lint to all kinds of contamination while in storage or in transit.

In years past, a lot of the honeydew or stains caused by cotton insects could have been prevented if farmers had used insecticides properly.

So why haven't we been getting complaints all along—instead of just in the last few years?

Primarily, it's because of the fierce competition we now face in holding onto our old fiber markets and in trying to win new ones.

For a long, long time, there just wasn't any question about which fiber was going to be used by the great majority of textile manufacturers. Cotton was it. They had to buy cotton from whatever qualities were available, at whatever the price of cotton happened to be.

• **Times Have Changed** — Spinners now have a variety of fibers from which to select. And since they are in a highly competitive business, where profit margins are small, they are forced to do some real pencil pushing in figuring out which fiber will be their best bargain in terms of **quality** and **price.**

So they have become acutely conscious of any and all reductions in **quality.** When damaged lint increases waste, or raises labor costs, or lowers the value of end products, cotton becomes a more expensive raw material to buy and process. The net effect of quality damage is to raise the price of cotton to spinners. And with cotton already suffering a price **disadvantage** in comparison with its biggest competitor, this is a heavy additional handicap in the race for markets.

Now the fact that spinners were offered **alternatives** to cotton was one of the big reasons why we witnessed a great surge of concern over quality losses. But there was still another reason, and that was the terrific growth of mechanization on cotton farms following World War II.

Mechanical harvesting intensified the old problem of keeping excessive trash out of seed cotton. It provided an additional source of contaminating cotton with oil and grease. It introduced us to the tangled-up knots of fiber called "picker twists." It increased the chance of getting grass, bark, vines and green-leaf stains in seed cotton. It brought on a great expansion in use of chemical defoliation—a practice which generally **preserved** quality, but which also could **damage** quality if improperly used.

As mechanical-harvesting expanded, and as rough hand-harvesting increased, more and more ginners were forced to install complicated new drying and cleaning equipment so they could do a good job of processing damp, trashy seed cotton.

This led to additional and very complex problems. For this modern ginning equipment that was expressly designed to enhance the quality of cotton, could, through careless or improper operation, damage quality.

This was a really tough problem to come to grips with, because the nature of the damage was different from that caused by contamination. It's hard to tell, without fiber instruments, when cotton has been weakened in strength, reduced in length uniformity, or increased in waste and neppiness. Such damage can occur when modern ginning equipment is used improperly. It is invisible to the average observer, but it can mean the difference between profit and loss in a spinning mill.

So farm mechanization, with all its ramifications, was the second basic reason why quality preservation was a growing problem. Mechanization was helping us hold down and reduce costs, and had a great potential for putting cotton in better position to compete from a price standpoint. But mechanization was being hampered and held back by some of the quality preservation problems associated with it.

I hope you've been able to get an idea of the nature and the importance and the tremendous scope of the cotton industry's problem in quality preservation. It demands concerted action from farmers, ginners, merchants, warehousemen, and spinners—from public research and educational personnel who work with these groups—from a wide variety of commercial concerns which are in the business of providing goods and services to the cotton industry.

The National Cotton Council, as the central organization of the cotton industry, has worked with all these groups in developing a comprehensive, cooper-

Cecil Crow displays the electrically controlled SEED-O-METER.

Seed-O-Meter for Gins

A new device for continuous automatic weighing of cottonseed. Cost and installation is much less than the cost of installation alone on the old hopper-type scale.

• Records every five seconds • Records by the second, the bale, the season —or all three • Takes the guesswork out of splitting bales • No stops, no delays, no labor • No seeds get by without being weighed and recorded • Economical, Dependable and Accurate.

Simple Installation — Immediate Delivery

Contact us for Cotton Beam Scales, Grab Hooks, Sampling Knives, and Cotton Scale Repairs.

Cecil Crow Scale Works

P. O. Box 3092 WACO, TEXAS Phone 2-7111

ative program aimed at combating quality losses.

• **Program Getting Results** — Though it is a comparatively new program, it already is beginning to yield some tangible results. As we continue to work together, we should be able to move forward much faster in preserving cotton quality.

For example, we should definitely be ready to make improvements in our bale package within a reasonable period —improvements calculated to eliminate all major sources of lint contamination from the time cotton is ginned till it reaches the mill opening room.

Certainly we will have made a great stride forward when we adopt a better package and do away with quality damage that occurs after ginning. But our program has three other phases which are of fundamental importance.

One phase deals with quality preservation **prior to ginning**, another with quality preservation **during ginning**, and the other with better quality evaluation in cotton buying and selling. In many ways these three are directly related, but for purposes of discussion we can try and consider them separately.

Now what can the grower do about quality preservation, prior to the time he takes cotton to the gin? He can do plenty if he understands how his actions can have an effect on quality—and how quality affects his profits, markets and eventually the acreage of cotton he is able to produce.

Almost every step in production can have a bearing on cotton's quality, some of the more important ones being:

Weed control and cultivation, which, if carried out properly, can help keep grass and other foreign material out of seed cotton.

Insect and disease control, which can prevent a large amount of damage from boll rots, stains and honeydew.

Chemical defoliation, which can help or hurt fiber quality, depending on whether it is properly used.

Harvesting practices, which probably offer the grower more opportunity than anything else to do a better job of quality preservation.

Early harvesting is always desirable to prevent needless losses due to weather. Banishing the tar-bottom picksack from the cotton field is something we ultimately hope to do, and growers now are able to buy plastic-coated and plastic-dot sacks which will not contaminate seed cotton. Tramping of seed cotton in trailers is, as we've always known, a practice that has an adverse effect on quality.

In the case of mechanical harvesting, most of our trouble is caused by careless or improper operation and maintenance of machines, because the machines themselves are engineered and designed to do an acceptable job of quality harvesting. Intensive education and training of both machinery owners and operators is the obvious answer to this problem. During the current season, farm equipment people, Extension workers, and the Council have worked very hard on this matter, and we plan to work equally hard in the seasons ahead.

In large part, the job of bringing about better quality preservation on farms is a job of education, and it calls for real close teamwork between educational workers, commercial personnel, and organized groups within the cotton industry.

There are, of course, some important implications for research. Equipment manufacturers, for example, might be able to make refinements in mechanical pickers and make them more foolproof in operation. We definitely need to make chemical defoliation a more effective tool of the cotton grower. And perhaps most important of all, now, is the matter of using water, oils or wetting agents in mechanical pickers. We know that excessive water in seed cotton gives the ginner his biggest headache in trying to do a quality ginning job. Stain from green leaf is also increased when seed cotton containing green leaf and **high moisture** is stored. We urgently need more research on this vital matter. Various hit-and-miss approaches are being used by growers now in an attempt to minimize their problems, but no one seems to know the answer. Confirmed facts are virtually non-existant and the result is a lot of confusion and costly practices. Water, textile oils and wetting agents are all being used, but we don't really know how they affect picking efficiency or quality of our cotton. If we could determine the optimum amount of water to use under various conditions, or learn which oils or wetting agents can be used to reduce or eleminate water without **themselves** damaging cotton quality, we could make a great forward step toward solving one of the most complex and baffling quality preservation problems facing farmers and ginners.

There are many other research problems to work on in improving quality preservation **prior to ginning.**

• **Ginners Can Help** — Now, a little earlier, I talked about some of the quality preservation problems during the ginning process—some of the problems that were hard to pin down because the nature of the fiber damage made it hard to detect.

In searching for the answer to gin damage, we finally nailed down two all-important facts that have formed the basis for action:

First, ginners in many areas were getting a large volume of damp, trashy machine-picked cotton right along with a large volume of clean, dry hand-picked cotton—often with a trailer-load of one type immediately following a load of the other type; ginners were in a bind because, by trying to handle each load in the order in which it arrived, they could not adjust their equipment fast enough between loads to take care of the radical differences in the moisture and trash content of the seed cotton.

Fact No. 2 was this: Everyone involved was losing good money where ginners were processing the two different types of cotton in the order in which they arrived on the gin yard.

For example, growers with hand-picked cotton were losing something like $6 to $7 a bale in staple and weight when their cotton was subjected to tne **proper** amount of heat for the usual run of mechanically-picked cotton. By turning it around the other way, we found that growers with mechanically-picked cotton were losing on the order of $9 to $10 a bale in grade when their cotton received only the proper amount of heat for hand-picked cotton.

Ginners were losing either because of increased fuel costs, lower plant capacity, or press difficulties and certainly because of customer dissatisfaction.

The obvious answer was to encourage producers and ginners to get together and agree on a plan for **grouping** and processing seed cotton according to its moisture and trash condition. And, starting this year, this has been a focal point of our cooperative attack on the problem of quality preservation in ginning. Results so far look very promising. The USDA Ginning Laboratories, Extension workers, gin associations, and other groups are doing excellent work along this line. We have received many reports that ginners are following a seed cotton grouping plan this season.

There is a big job here, of course, for ginning research. Much work is being done right now on automatic controls which will enable ginners to do a better job of processing for efficiency and quality. There are studies along many other lines—such as seed cotton storage as a means of providing more orderly ginning.

Now the final phase of the program is concerned with more precise evaluation of fiber quality as a means of providing a sounder basis for cotton buying and selling—and obviously, of encouraging practices that preserve fiber quality.

In this day of precision, quality control in textile manufacturing, grade and staple classifications, while still basic and essential, no longer tell us enough about the use-value of our raw material. There are other factors—less obvious factors—which must be considered. Laboratory fiber testing is rapidly coming into its own as a means of evaluating these factors. All of us are now familiar with the Micronaire for measuring fineness, and Pressley for measuring strength. Progress in fiber instrumentation, while invaluable in many other ways, certainly should be directed in such a way that it will give full recognition to the need for better evaluation of damage to cotton's use-value.

We need tests that are simple, tests that are accurate, tests that are fast and economical enough to be used wide-

If He Takes in Washing, He'll Do It at Home

■ **GEORGE B. NUTT, director of the South Carolina Extension Service, expressed his feelings about the synthetic materials in his talk at the 1955 Beltwide Mechanization Conference at College Station. Nutt explained that his wife bought him two shirts made of synthetics when he was appointed director of the Extension Service, so that he could wash them out and would not have to carry so many shirts on his trips.**

"After trying this for a few days," Nutt declared, "I decided that if I had to take in washing, I'd stay at home and do it. Furthermore, I decided that I might as well sleep in the synthetic shirts, too, because they looked like I had slept in them after I got through washing them."

The South Carolinian added that his synthetic shorts were too hot for summer, too cold for winter and too "crawly" for any weather, so he's using only cotton now.

ly in the everyday process of cotton marketing.

Public research workers, private laboratories, and others have already performed highly valuable service in advancing fiber instrumentation, and they are working on projects right now which should be of great value in adjusting our buying and selling practice so as to encourage quality preservation.

It's taken a long while to get our quality preservation program rounded out to its present stage, and I think you can understand why. We had a bewildering array of complex, interrelated and sometimes very elusive problems to tackle, and there were many groups and organizations which needed to be brought into the program.

I think you can understand, too, why the cotton industry has become so concerned with quality preservation—why we feel so strongly that it is a growing problem that must be solved.

Quality Preservation:

Skill in Harvesting and Ginning Required

BY S. P. LYLE, Washington, Assistant Director, USDA Extension Service Division of Agricultural Programs.

The continuing increase in mechanical harvesting of cotton establishes its economic value in replacing scarce hand pickers, but a preference of some buyers for hand-picked cotton indicates the opportunity to improve the operation of mechanical pickers. Some of the adverse effects on the quality of the lint are attributed directly to lack of information or understanding of the quality requirements by the operators of machine harvesters. Others relate to drying and cleaning the machine-harvested cotton at the gin.

It is important to realize that mechanical harvesting and ginning for quality can also reduce costs and increase efficiency. There is a widespread feeling that in mechanical harvesting and the subsequent ginning, quality can be obtained only at the expense of quantity. However, within the capabilities of the machines the best operation for quality can and should also increase efficiency.

Mechanical cotton pickers have built into them the field experience of countless hours of research and testing. Each complete picker constitutes an investment of about $8,000 or more in the most skillfully contrived of all modern harvesting machines. This investment and the necessary economic return warrant a sound investment also in the skill of the operator.

• **Operators Trained** — Concerted effort has been under way this season in Mississippi, Missouri, Arkansas, Louisiana, Texas, Arizona, and California to train operators of spindle-type cotton-picking machines to preserve the quality of lint so that it is equal to hand-picked lint. Approximately 85 percent of the 16,000 spindle-type picking machines are operating in these seven states. It is important to the growers using machine pickers that the skill of the operators shall fully utilize the capacity of the machine to pick lint equal to hand-picked lint in market acceptance and spinning value.

Cotton mills are specific with reference to the objectionable conditions of lint which they attribute to mechanical pickers. Not all bales have such damage, and frequently it is not sufficiently present to show in the sample or affect the class. But it is prevalent enough and costly enough to the mills to lead to buyer preference for hand-picked cotton. The training of picker operators for quality harvesting was recognized as a key to the problem, and steps were taken this spring to get the cooperation of all organizations needed in the training program.

The National Cotton Council presented the problem and the evidence of the picking machine effects on lint to representatives of the manufacturers of the cotton picking machines, the Extension Service, the Agricultural Research Service, and the Agricultural Marketing Service, USDA. Working together they developed an instruction manual entitled "Quality Harvesting with Mechanical Cotton Pickers," suitable for use with the instruction manuals supplied by the manufacturers for every make and model of cotton-picking machines.

Charles Oglesbee, federal Extension engineer, compiled this manual and improved it by three revisions during April, May, and June. It was approved by about 20 research, industrial, and Extension specialists in time for its use in the training work conducted in July and August.

The instructions for quality operation are in agreement with the instruction manual for each machine and if followed will not only improve the preservation of lint but also result in more efficient operation, less loss of time in the field, and longer life for the machine.

In addition to the manual, sets of color slides and circulars were prepared by the National Cotton Council and the federal and state Extension Services for the information of all owners of cotton-picking machines in the states previously listed.

Meetings held in various states were of three kinds:

Extension meetings to acquaint owners of spindle-type pickers with the marketing importance of quality operation, the value of training picker operators, and the need for emphasis on quality in their supervision of the field operation of pickers.

Manufacturers' training schools for their dealers' servicemen to prepare them to train picker operators to obtain the best quality of lint from their respective makes of machines.

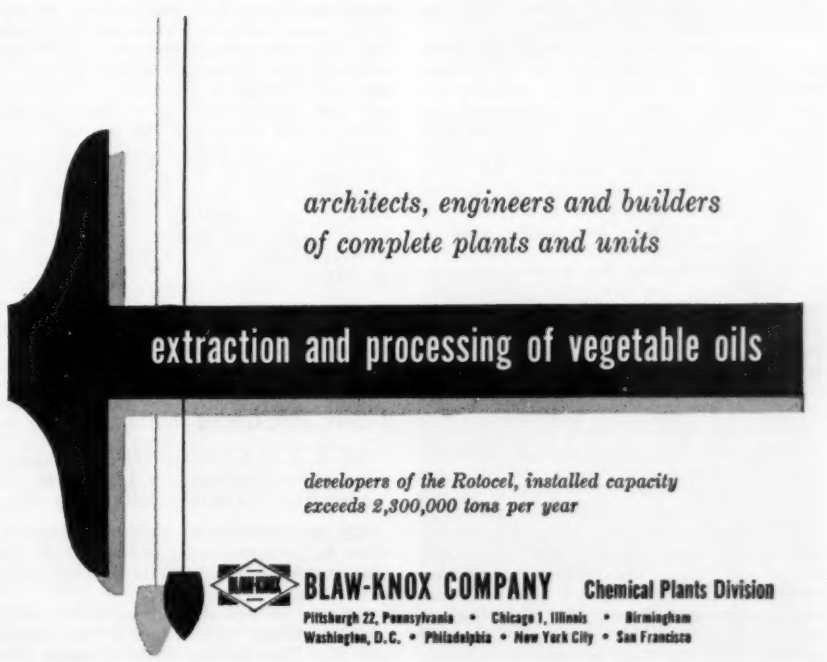
Dealers' training schools for operators of cotton-picking machines, held in cooperation with Extension workers, to acquaint the operators with the advantages and means of preserving lint quality in the efficient operation of cotton-picking machines.

These meetings will be followed by extension field work with the owners and the operators to encourage the practical use of the quality and efficiency training.

• **General Recommendations** — It should be recognized, of course, that the skill of the operator using the best capability of the mechanical picker cannot alone cope with all the problems of lint quality associated with mechanical picking. The manual on "Quality Harvesting With Mechanical Pickers" therefore contains seven general recommendations relative to:

1. Preharvest practices, such as grass and weed control and defoliation, which affect the quality and efficiency of mechanical picking.
2. Preharvest conditioning of the picking machine and its maintenance.
3. Supervision of operation and maintenance.
4. Precautions to avoid damage to lint from moisture or wetting agents applied to the spindles, or from dew or rain.
5. Precautions for handling and storing machine-picked cotton.
6. Grouping loads of seed cotton at the gin requiring similar moisture removal or cleaning treatment.
7. Following the instructions of the manufacturer.

This manual for operators of spindle-


architects, engineers and builders
of complete plants and units
extraction and processing of vegetable oils
developers of the Rotocel, installed capacity
exceeds 2,300,000 tons per year
BLAW-KNOX COMPANY
Chemical Plants Division
Pittsburgh 22, Pennsylvania • Chicago 1, Illinois • Birmingham
Washington, D.C. • Philadelphia • New York City • San Francisco

Conference Comments:

"Either agriculture is going to develop competitive capacity through efficient production of quality products, aggressively merchandised or it is going to become dependent upon political influence for its economic condition. The choice is clear."— ERVIN L. PETERSON, Assistant Secretary of Agriculture, Washington.

type mechanical cotton pickers deals with the following five lint conditions: (1) spindle twist, (2) green leaf stain, (3) excessive trash, (4) oil and grease, and (5) extraneous matter. Obviously, some of these conditions are also associated with harvesting in other ways, and the opportunity to improve the other methods of harvesting is recognized.

Proper care in hand picking cotton has been emphasized continuously in association with the Extension cotton ginning work for cotton quality improvement started in 1936. During World War II, quality in picking received campaign emphasis every year because of lint damage from rough and late harvesting due to shortage of hand pickers. These problems are still with us.

The economic problem involves the use of more power and equipment in the cotton gins in order to compensate for rougher harvesting in the field. The cotton ginning industry had met this challenge as a business opportunity. Cotton ginning, research and marketing services have provided guide lines to ginning improvement. Manufacturers of cotton ginning equipment have met the challenge by providing continuous progress in the production of efficient drying, cleaning, ginning, lint cleaning, packaging, and auxiliary equipment.

Cotton ginners have eagerly followed the progress of the research and technology by making sound investments in modern equipment. The cotton ginners' associations have sought the aid of the Extension Service and the manufacturers to provide training for the operators of gins for top efficiency and the preservation of lint quality.

A four-point program for quality ginning has been stressed by the Extension Service. At the same time, schools for gin operators have been conducted cooperatively by the manufacturers of cotton gins. More than 5,000 operators of gins have received training in such schools in the past three spring seasons. Such training for cotton gin operators, begun 12 years ago, has helped lead to the virtual disappearance of rough preparation. The record for rough preparation has been less than one percent for the past three years. During these years the grade index has been held high in spite of increasing weight of moisture and trash in the seed cotton.

There is at least one factor affecting quality in which the cooperation of producers and ginners could be of mutual benefit. I refer to grouping together loads of seed cotton which require similar drying or cleaning treatment at the gin.

Ginning and spinning tests have shown that five to seven percent moisture in the fiber generally, provides the optimum condition for ginning to turn out the best sample. Below six percent is approaching too dry and above seven percent approaching too moist. An optimum fiber moisture condition is not always attainable, but it is the target at which to shoot. The skillful ginner becomes familiar with the optimum range by the feel of the ginned lint fiber, but it is best to check such a close requirement by measurement with a moisture meter.

Moisture meters are available for quickly determining the percentage of moisture of seed cotton and of ginned lint, and research is now in progress to adapt such instruments for use during the process of ginning to enable operators to control the application of heat in the dryer. But even with accurate fibermoisture measurements the gin operator cannot regulate closely enough the change of heat requirements for alternate wet and dry loads of seed cotton. Therefore, grouping of loads of seed cotton with similar amounts of moisture is highly desirable for preservation of the quality of the lint.

Grouping of loads of seed cotton with similar amounts of kinds of foreign material is also important to assure that clean-harvested cotton shall bypass some of the cleaning machinery required to handle rough-harvested cotton.

New printed circulars on seed cotton grouping and cotton quality preservation are available to cotton growers and ginners to assist them in obtaining quality harvesting and ginning this year.

Common understanding by cotton growers and ginners of the combined skill required to preserve the quality of lint in both the harvesting and the ginning processes is profitable. Too many local conditions are involved to depend on general rules but training by qualified instructors and supervision of mechanical picker operation for quality as well as efficiency is paying dividends and can strengthen the position of machine-picked cotton in the market.

Training of cotton picker operators will take time, as it has with cotton gin operators. But if it yields similar results in understanding and skill, it will be a timely and paying investment in strengthening the competitive position of cotton.

Quality Preservation:

Gin Manufacturers Face Problem

BY A. L. VANDERGRIFF, Columbus, Ga., Vice-President, in Charge of Engineering, Lummus Cotton Gin Co.

Gin manufacturers recognize that we have many unsolved problems, and that the problems are becoming more acute each year.

Adding to our difficulties are acreage controls which are reducing the volume per gin. This brings about a more competitive situation among ginners, which increases the pressure on the ginners to make a better grade and results, generally, in more drying and mechanical handling of the fibers. In most areas, mechanical harvesting is becoming more of a factor. This results, among other things, in getting the crop harvested faster, which in turn brings pressure on the ginner to gin it faster.

• **Gins More Efficient** — The increase in the percentage of mechanically harvested cotton with its high foreign matter content, along with the reduced quality of hand harvesting, is resulting in ginners spending many millions of dollars each year for new equipment to enable them to produce acceptable grades. Many gins which were considered adequately equipped five years ago for mechanically harvested cotton now find that they must add more equipment to keep up with competition. Elaborate gin plants which now have seed cotton cleaning systems capable of producing 80 per cent efficiency will no doubt find, if the present trend continues unchecked, that they will soon have to add sufficient drying and cleaning equipment to increase this efficiency to near 90 per cent.

We know that the mechanical cotton picker is one of the most ingenious farm machines ever developed. Its development has been the key link in mechanization of cotton farming. The patient work done by the developers of this machine over the last 30 years deserves our highest praise. However, with this machine, as with any other, we have operator troubles.

As you know, it takes a sizable investment in gin machinery to make even a half-grade improvement, yet it is very easy and very common to find that poor operation of a spindle picker lowers the grade by one full grade from that of normal operation. We are sure that conscientious efforts are being made to improve this situation, but we wanted to emphasize its importance.

We feel that more research work should be done on the possible effect of some of the many wetting agents used on the spindles of the pickers. Just about everything imaginable is being used in the water for wetting the spindles and we believe the farmers would welcome some advice on this.

Defoliation is a very important factor in mechanical harvesting and its success and timing can easily cause a full grade variation in ginning results.

Our success in the race to hold the level of the grades up, in spite of the yearly increase in foreign matter and moisture content of cotton brought to the gin, is substantiated by statistics released by the USDA. These show that the grade level of the 1954-55 crop is almost the same as that of the 1940-41 crop.

In spite of these successes in producing acceptable grades, we are very much concerned about the constant complaint from the spinners as to the spinning quality of the lint. If producing higher grades meant producing better spinning quality, we could continue happily on our present course. However, we must admit that there is evidence that the grade of the lint is not the major factor in spinning.

• **Cleaning and Drying Problems**—Tests and actual mill experience show that, although cotton may be ginned according to the best known methods, as the drying and mechanical handling increases,

the yarn strength and yarn grade gradually decrease. Excesses in either or both of these processes may result in unprofitable mill processing.

To state our problem simply and frankly, we are faced with a situation in which cotton has been excessively dried and cleaned will most likely bring the top market price, yet its value to the spinner may be less than if the drying and cleaning had been on a grade or two grade lower level.

Beyond these meager and not too well substantiated bits of information, there is not enough known about how the various processes in ginning affect the yarn quality factors. A study of these relationships is complicated by the fact that modern ginning actually includes five separate processes. These are drying, seed cotton cleaning, ginning, lint cleaning, and baling.

We are often asked the question by our mill friends — "Why do you equip a gin in such a way that cotton can be over dried and over machined, and why can't you teach ginners to operate the plants in such a manner as to avoid this?" Of course, no ginner would want to deliberately damage the spinning quality of the lint, but the simple answer to the spinner's question is that under the present grading system, additional cleaning and drying generally improves the value of the cotton. Since the grade is such a big factor in the profits of the farmer and ginner, cleaning and drying will naturally tend to reach the excessive stage unless some practical stop sign can be located. To oversimplify the problem, we could say that the primary aim is higher grades because we all like to eat.

This lack of adequate standards on which to judge spinning quality cannot be blamed on any single phase of the cotton industry but it is the key to quality preservation and the solution requires the continued joint efforts of all phases of our industry.

We recognize, of course, the fine work that has already been done in setting up laboratory standards for merchandising, and it is largely to the individuals and groups who have made these developments that we must look for future progress in this field.

In our research, we have naturally been faced with the problem of evaluating work done by various machines from the standpoint of their affect on spinning quality. Over a period of several years, we have depended on the laborious fiber length array as an aid in evaluating our various processes. We soon noticed a definite relationship between short fiber increases and nep counts both in ginning and mill processing. After tabulating these factors over a period of time, the correlation was so good that we could easily predict nep count increases from short fiber increases and vice versa.

This was so impressive to us that we recently started trying to find correlations between these short fiber increases and other factors affecting spinning quality. The fact that any given cotton may naturally have a poor length distribution is not of concern to us, but if the poor length distribution is due to the ginning process, then it is our concern.

Our efforts have been primarily to determine the percentage of increase in fibers shorter than one-half inch due to various processes in ginning. As an example, if lint when hand pulled from the seed contains 12 percent fibers shorter than one-half inch, as compared with 18 percent fibers shorter than one-half inch in the bale, the ginning increased the fibers shorter than one-half inch by 50 percent.

It may surprise some of you to know that our tests indicate that a well operated, elaborate gin plant can easily increase the percentage of short fibers (less than one-half inch) by more than 50 percent, although the classer's length shows no difference from the simple through the elaborate gin.

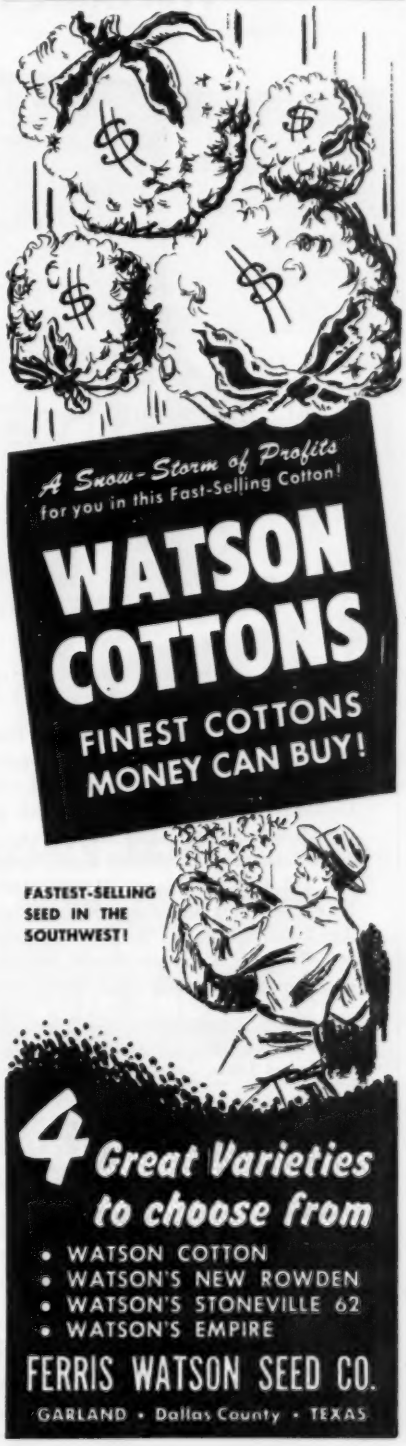
There are several factors within the plant which will affect this short fiber increase. Certainly excessive speeds of cleaning machines, excessive gin saw speeds, excessive temperatures, etc. all tend to break more fibers, thus increasing the number of short fibers. Any mechanical processing of the delicate fiber breaks a small percentage of them, and it is perhaps not too disturbing since it has been going on in both gin and mill processing for quite a long time. However, we think it is time that we devote some very special effort to determining just how far we can go in adding mechanical handling and drying and still produce an acceptable quality. Up to now, we do not know how far we can go in short fiber increases, nor do we have conclusive proof that this fiber breakage means fiber damage, but until we can find a measuring stick we are doing all we can to hold these factors to a safe level. To accomplish this, we must necessarily avoid any unnecessary mechanical processes and control our drying as best we can to produce acceptable grades. Our prime interest here, as we have already stated, is to stimuate interest in finding a ginning index from which spinning quality can be predicted.

On small scale spinning tests, we have been able to study in a very limited way the correlation between the percentage short fiber increase and various yarn quality factors. We have made these preliminary studies under a rather wide range of ginning conditions from roller ginning through the most elaborate gin set-ups.

We have found good correlation between percentage short fiber increase and raw stock nep count. We also have found a fair correlation with yarn strength. This is logical from two standpoints. The higher percentage of short fibers would naturally make weaker yarn, and any action which is drastic enough to break a significant percentage of the fibers would be expected to weaken the individual fibers as well as remove some of the crimp which is so important to the yarn strength. Also, there seems to be a fair correlation with seed coat fragments in

Joins Council Staff

CARL C. CAMPBELL is assistant director of the National Cotton Council's foreign trade division, as announced earlier in The Press. He is located in Washington and will supervise daily activities of the division in the absence of Reed P. Dunn, Jr., director. Campbell has been acting head of USDA's Foreign Agricultural Service.


A Snow-Storm of Profits
for you in this Fast-Selling Cotton!
WATSON COTTONS
FINEST COTTONS MONEY CAN BUY!
FASTEST-SELLING SEED IN THE SOUTHWEST!
4 Great Varieties to choose from
• WATSON COTTON
• WATSON'S NEW ROWDEN
• WATSON'S STONEVILLE 62
• WATSON'S EMPIRE
FERRIS WATSON SEED CO.
GARLAND • Dallas County • TEXAS

Ready Now!

1955-56 EDITION

The International Green Book

OF COTTONSEED AND OTHER VEGETABLE OIL PRODUCTS

CONTENTS

• Cottonseed, Soybean, Linseed, Peanut and other Vegetable Oil Mills in the U. S., Canada and Latin America . . . Cottonseed and other Vegetable Oil Refineries . . . Cottonseed and other Vegetable Oil Shortening Plants . . . Cottonseed, Soybean, Peanut and other Vegetable Oil Products Brokers, Dealers, Importers, and Exporters . . . Margarine Manufacturers . . . Soap Manufacturers . . . Mixed Feed Manufacturers . . . Fertilizer Manufacturers . . . Oil Mill Machinery Manufacturers and Dealers . . . Bag and Bagging Manufacturers and Dealers . . . Manufacturers of Petroleum Products . . . Analytical Chemists . . . Cotton Compresses . . . Officers of Cottonseed and other Oilseed Products Trade Associations . . . Officers of Allied Trade Associations . . . Statistics of Value to the Vegetable Oil Industry.

(NOTE: Generally, cottonseed oil mill listings in the United States show officers, addresses, equipment and rail location. Many of the other vegetable oil mill listings in the United States, Canada and Latin America also give this information.)

Price $10

($12.00 outside of U.S.A.)

Published and for sale only by

The Cotton Gin and Oil Mill Press

3116 Commerce P. O. Box 7985 Dallas, Texas

the yarn. As many of you know, seed coat fragments are being recognized as a very important quality factor. We have for some time made seed coat fragment counts in evaluating our processes and found some correlation between these fragments and nep counts.

We have not had much success in correlating the short fiber increases with yarn grades. It was interesting to find that yarn grades vary very little from the simple roller ginning through the most elaborate ginning set-ups. However, there was a slight but gradual decrease in the yarn appearance index from the simplest roller ginning through the elaborate set-ups. We devised a system for counting yarn imperfections from the yarn boards and we did find a very good correlation between these imperfections and short fiber increases.

To establish definite correlations will require considerable future testing; and, of course, for these correlations to be highly significant, they will have to be proven by tests at the mill level. Such testing cannot be carried out without the cooperation of all phases of our industry, and you can rest assured that the gin manufacturers will cooperate to the fullest extent in such work.

Assuming that definite correlations between short fiber increases in ginning and yarn quality factors could be established, then what? The next logical step would be the development of a quick method of determining the percentage of short fibers by which the hand pulled lent from the seed cotton and the baled lint could be checked. This would probably make it necessary for a small sample of the seed cotton to be sent with the lint to a laboratory. A quick method of determining the percentage of short fibers would certainly be a problem, as it has been in the past, but more difficult problems have been solved.

Even with our present array method of determining the percentage of short fibers, it might be possible that mills, through the cotton merchants, could check gins in an effort to find more desirable cotton. For example, a mill might desire middling 1-1/16-inch cotton, with a specified Micronaire from certain area. In addition to this, they might want to place some limitation on the short fiber increase by the gins.

There are many possible approaches and any method will probably add to the expense of merchandising, but in order to get better ginning there necessarily must eventually be a price advantage for better ginned cotton.

Planting Methods And Spacing

BY H. F. MILLER, Beltsville, Md., Agricultural Engineering Research Branch, ARS-USDA.

The often heard statement that we may not need to continue research in mechanization since we have a surplus of cotton is a misunderstanding of the purpose of continued research in mechanization. Any improvements in machines or methods in the entire production cycle, as well as in the critical areas of weed control and harvesting, will continue to benefit the cotton farmer. Improved mechanization methods are necessary to decrease the cost of growing cotton per acre or per pound so that our farmers can compete on the world market and try to hold the production they now have in the face of competi-

tion from synthetics and an increasing foreign production.

• **More Efficient Spacing** — More efficient planting at the optimum spacing to give highest production and harvesting efficiencies is one way of producing the same cotton on fewer acres at less cost. This is the same trend the manufacturing industry is taking to meet competition.

Let's look at the effect of various spacings of cotton on plant growth and fruiting habits, cultural practices, yields and harvesting efficienices. Some of the effects of increasing plant population (closer spacing in the row) that have been found to be generally true are:

Decreases diameter of main stalk at base.

Decreases number and length of or eliminates vegetative branches.

Decreases height of the plant.

Decreases stability of plant.

Decreases boll size.

Decreases yield slightly in South and Southeast particularly under drouth conditions at the upper or extreme population limits.

Increases height of first boll above ground.

Increases shading effect on grass and weeds especially during middle and late season.

Increases machine picking efficiency under most conditions.

Increases stripper harvesting efficiency.

Increases yield up to a certain point, particularly in Northern and irrigated areas.

Increases leaf trash in machine harvested cotton.

Increases difficulty of coverage when defoliating.

Increases number of bolls per foot of row.

In general, does not significantly affect yield within certain population ranges.

Although problems in mechanization may be new to many of us, the problem of cotton spacing is an old one and much literature is available and in general still applicable. Let me quote from USDA Farmers' Bulletin No. 1661, dated 1931, entitled, "Farm Study of the Cotton Plant":

"Closer spacing is being used more and more by the best growers, and most of the contests for larger yields have been won through this method. In many cases the seeds are planted at the rate of 20 to 25 pounds to the acre, and the stand is left unthinned. This method of leaving the cotton unthinned seems particularly adaptable to districts where seasons are short and the plants do not grow too rank."

A review of the summary of many experiments conducted from 1915 to 1940 in Alabama, Mississippi, Louisiana and Texas indicated a trend of highest yield anywhere from one plant each 18 inches (8,300 plants per acre) to two plants each 12 inches (26,000 plants per acre). Since 1945 many experiments have been run in plant population ranges from 13,000 to 100,000 plants per acre in an effort to find the best range for each variety in each area for highest yield compatible with highest machine efficiency and other mechanized operations.

To the amazement of almost everyone, there was found to be a very wide range of plant spacing between 20,000 (8-inch spacing) and 60,000 (2½-inch spacing) which apparently did not significantly affect yield but did give significant increases in harvesting efficiences. Since then each section of the Cotton Belt and almost every farmer has been trying to find out which plant population suits him best.

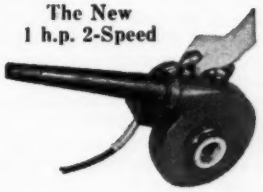
It appears that, within certain ranges, it will not make any difference under most growing conditions. The variety of cotton, moisture conditions, the degree and time of insect infestations and the weather conditions, particularly in the northern edges of the Cotton Belt, all have a bearing on the spacing that would have been most optimum for a given growing season. These variables have been and can better be explained by our agronomists, physiologists and entomologists.

Plant populations varying from 40,000 to 65,000 plants per acre are generally recommended in the High Plains of Texas and Oklahoma where stripper type harvesters are used and the growing season is short. The primary advantage seems to be due to the higher stripper efficiencies and the nature of the growing season. In the South and Southeast, 25,000 to 50,000 plants seem to be the range most suitable for mechanical picking. A greater range of 20,000 to 70,000 is often quoted for Southwest and Western conditions.

At this point there are two observations that should be made. 1. This wide range of spacing (generally suitable under most conditions) has encouraged and simplified the practice of planting cotton to a stand. 2. Results of experi-

TRY IT—FREE

The New
1 h.p. 2-Speed



ACE GIN BLOWER

To prove that the ACE Gin Blower

Cleans faster and better
Reduces fire hazards
Prevents overheating
Saves time and labor

We will send one for FREE TRIAL.

Write for details. No obligation.

The Ace Co.

114 W. Washington St., Ocala, Fla.

SAVE Time-Money
by installing
FAFNIR PILLOW BLOCKS
HANGER BOXES
COUNTERSHAFT BOXES

...and other Fafnir Ball Bearing Power Transmission Units. Easiest of all to install because they have the famous Fafnir-originated WIDE INNER RING BEARING WITH SELF LOCKING COLLAR

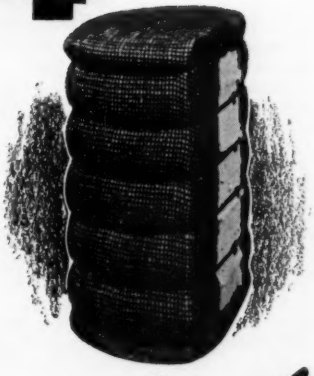
Eccentric cam, mated design of collar and inner ring provides positive locking action at all times. Bearing slip fits over standard size shafts . . . it's bored to inch dimensions. For details write The Fafnir Bearing Co., New Britain, Conn.

MOST COMPLETE LINE IN AMERICA

FAFNIR BALL BEARINGS

4 GOOD REASONS FOR USING

Carolina **JUTE BAGGING**



1. **EXTRA STRENGTH** — Carolina Jute Bagging is extra strong . . . tested for uniformity. Full yardage and full weight is guaranteed.
2. **TAKES ROUGH HANDLING** — Stands up well under rough handling . . . protects cotton both in storage and during shipment.
3. **MAXIMUM PROTECTION** — Cotton is subject to less weather damage than that covered with closely woven cloth.
4. **LOOKS GOOD LONGER** — Open weave admits sunlight and air . . . keeps cotton dry and in good condition. Looks better after cutting sample holes.

Carolina **BAGGING COMPANY**

HENDERSON, NORTH CAROLINA

ments in growing cotton under these wide ranges of plant populations seem to indicate a desirability of keeping the population within the lower limits. This leads us directly into the planting problem. Before getting into planting, however, perhaps I had better further explain the latter observation. In areas where cotton is grown for mechanical picking, plant populations of 20,000 plants per acre (8-inch uniform spacing) or, 26,000 plants per acre (2 plants at random, per foot or hill-dropped) in general give sufficiently high picking efficiencies and yield. Thicker populations, particularly above 40,000 plants per acre (3 plants per foot) may give certain undesirable characteristics. Some of these undesirable characteristics are as follows:

1. Trend toward lower yield, particularly in the South and Southeast under non-irrigated conditions.
2. Increased leaf trash in harvested cotton.
3. Greater amount of re-growth leaves.
4. Increased difficulty of coverage in defoliating.
5. Decrease in boll size, possibly affecting picking efficiency.
6. Increased tendency of plants to fall over (lodge) in certain areas of the irrigated West.
7. Possible decrease in fiber and yarn strength as indicated in one western experiment.
8. Excess nitrogen and water with thick spacing tends to give excessive plant growth, later setting of fruit and possibly more immature fiber at harvest time.

It appears that by eliminating as much as possible these undesirable characteristics with increased emphasis upon better machine operation, we would be going in the direction of better preserving lint quality.

The optimum plant population for yield and picking efficiency can be decreased if the uniformity of plant spacing can be improved. Thus we find ourselves wanting to plant cotton to a stand and be assured of one plant each eight inches or the assurance of one or two plants each six inches.

• **Equipment and Methods** — This is a good place to stop and start discussing planting equipment and methods. Time will not permit me to go into the history of planters. However, I would like to point out some of the recent developments in planting equipment and make some observations regarding possible further developments.

Planting is accomplished primarily in the High Plains area by four-row lister-type planters in prepared beds. The beds are split with the lister sweep and the seed placed in furrows four to five inches deep to obtain proper moisture, prevent wind damage and allow sufficient soil for covering early weeds. The use of a hollow rubber-covered seed press wheel on accurate opening and covering attachments allows seed to be covered with one to two inches of soil. The pressing of the seed into firm moist soil prior to covering gives quick germination if no rain falls and the shallow covering allows the seed to emerge without difficulty should a rain come before emergence.

The hollow rubber-tired press wheel is proving advantageous to other Southwest and Western irrigated areas. This development is not new, as it was first applied in California as early as 1925 using a steel wheel 1½ inches wide. However, it was not until 1949 that industry and cotton mechanization research engineers started work on the hollow rubber-tired press wheel. It was made available on equipment in appreciable numbers beginning in 1954.

A new development by research workers in Oklahoma is further improving planters in that area. They are adapting them with disks so that a small furrow two to three inches deep is left on each side of the drill row where the seed is placed but still within the large furrow. This allows excess rainfall to drain off without damage to the seed or the washing away of the soil immediately above the seed.

One of the most common type of planters used in areas other than the High Plains consists of a runner or knife opener with wings of various lengths attached on each side of the runner. Wings extending 10 to 15 inches on either side of the runner opener are used where the seed are planted on a bed or near ground level. Short wings extending 5 to 10 inches on either side are used where slightly-below-ground-level planting is desired. Where soil moisture, temperature and usual rainfall conditions will allow, the seed are generally planted below ground level so that soil is available for throwing toward the plants for early weed control. Disks, shovels, knives or drags of various types may be used for covering the seed depending upon soil type. Whatever is used, uniform covering only deep enough to prevent the seed from drying out before sprouting is recommended. This will vary from one to two inches, and in no case is it believed over two inches is necessary if the proper planting equipment is used.

Recent research developments by industry and research workers in the use of a double disk opener for certain trashy and heavy soils have shown considerable promise. An advantage is that the disk will cut through trash and make a very narrow opening in heavy and cloddy soils which is easier to cover with a minimum loss of soil moisture.

Delinted seed is necessary for accurate metering. The most common metering device generally used for mechanical or acid delinted seed is the side hole plate (a flat plate with small holes on the perimeter.) Hoppers placed closer to the ground and better designed seed tubes are both helping to make more accurate metering of seed possible. Plates for very accurate planting of acid delinted seed are made to hold one seed per cell. The rate at which the plate turns will accurately determine the spacing of the seed in the row.

Research is in progress in Oklahoma on what, if any, advantages may be derived from using cottonseed graded to certain sizes. They are studying it from the standpoint of both accurate metering and the effect upon field emergence, plant growth, boll size and yield. Diameter classes representing the greatest quantity of seeds in each variety appear to give best performance.

With approximately 4,000 seed per pound and seed with 80 percent germination, 19 pounds of seed per acre would give 60,000 plants per acre. If only 50 percent germination and survival were obtained, a plant population of 30,000 plants per acre would result which is still well within the suitable range. Some growers in the irrigated West are planting as low as 10 pounds of seed when the lower range of plants per acre is desired.

Suggested areas for increased re-

Arkansas Gin Likes Cotton Grouping

CHARLES ADAMS says its the only way to do best possible job with two kinds of cotton harvesting.

■ GROUPING of seed cotton is, simply, a practice of dividing seed cotton loads at gins according to whether they are hand- or machine-harvested and ginning them separately. As described Aug. 13 in The Press, this plan helps to improve ginning and prevent damage from over- or underdrying. The plan has worked for many ginners, including Charles Adams, Delta Gin Co., Hughes, Ark. Adams' comments follow:

"Grouping and ginning hand-picked and machine-picked cotton separately is the only way we can do the best job of ginning on both kinds. It's a good way to avoid 'plated' bales.

"We usually hold back all machine-picked cotton until night and then gin it all together after the necessary adjustments are made in our driers. If growers need the trailers, we unload them into a storage house until night or until enough machine-picked cotton is received to warrant a switch-over.

"Grouping is equally important to producers of either hand-picked or machine-picked cotton. I believe any producer will go along with the grouping plan once he understands its advantages."

Your Cotton Council Pays Off

The Council is a leader in pressing for funds to give agriculture a research and educational program comparable to that of industry. An $18-million increase in federal appropriations for agricultural research in 1954-55 is the largest increase ever granted for this purpose.

Support Your National Cotton Council

search and/or industry service are as follows:

1. Cooperative work between cotton breeders, agronomists, physiologists and engineers on the adaptation both of cotton to machines and of machines to cotton. The entire team should work together and understand each other's problems for most effective results.
2. Effect of different spacings within the range most suited for mechanical harvesting upon lint quality.
3. Planter equipment modification kits or replacement parts for already owned planters incorporating improved designs where possible.
4. Refinement of methods for planter furrow opener and covering attachment adjustments.

Forward thinking cotton growers and research scientists are placing increased emphasis on planting cotton to a stand. Equipment manufacturers are taking the trend into consideration because it fits logically into the economics of cotton production under mechanized conditions. The planting of as few seed as possible (for optimum stands and spacing) and the placing of these seed in the ground in a manner to fit the mechanized method for most efficient weed control and harvesting helps lower production costs and produce the best quality lint for the most profit.

Mechanical Equipment For Insect Control

BY DR. R. D. LEWIS, College Station, Director, Texas Experiment Station.

Mechanization of insect control in cotton applies to far more procedures and practices than spraying and dusting. In order to appreciate the needs for mechanical equipment for insect control let us first review in outline the majority of the production and processing situations at which insects may affect cotton in quantity and quality.

First, there is the problem of disposal of residues of preceding crops, including cotton, in which damaging insects may live over winter or from one crop to the next.

Second, there is a possible further need for delinting and seed treating equipment. Where insects are seed borne, as in the case of pink bollworm, methods of killing the larvae within the seed are needed. With the further development of systemic chemicals to be used in control of insects in the early stages of growth of the cotton plant, seed treating processes may need to be further mechanized.

Third, is the control of insects in the growing and maturing crop through application of sprays and dusts by ground or aerial equipment.

Fourth, is the use of electrical equipment, such as light traps, and radioisotopes in determining the occurence, the spread and flight patterns of insects.

Fifth, the type of machine used at harvest may affect the carryover of certain insects to the next crop. The stripper harvests unopened bolls and may therefore remove much of the pink bollworm from the field.

Sixth, the effective shredding and plowing under of stalks and boll residues left on the field reduces the reproduction of pink bollworm and other insects.

Seventh, is the mechanical killing of larvae of insects, particularly pink gollworm, in gin trash.

What are the mechanical needs for control of insects in cotton? Mainly, they seem to be improvements in the effectiveness of the functional equipment we now have. However, we should take no present procedure or machine for granted. Let us be eternally dissatisfied with what we have if it be only partially successful.

It is my belief that in the future we will pay more attention to methods of **prevention** of occurrence of serious insect outbreaks, so as to reduce the necessary effort in control of outbreaks and operations of clean-ups. To do this, however, we need first to know far more about the insects themselves and the possible weak points in their life histories, which may permit new methods of attack by cultural, mechanical, chemical, atomic or still unknown methods.

To return to the specific listing of situations in which mechanical equipment now aids in insect control, we may mention a few needs for further research and development:

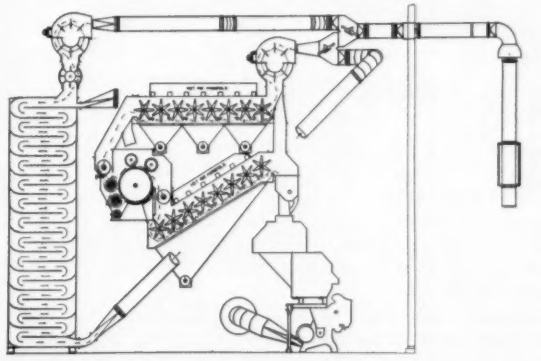
Further improvement in spraying and dusting equipment, especially for use in pink bollworm control; good progress is being made in ground equipment through the S-2 regional research project and the work of individual stations for such equipment for other insects. At this station our engineers and entomologists have shown, somewhat to their own amazement, that one hollow-cone type nozzle spraying directly over the row gave control of cotton bollworm and boll weevil and yield increases equal to those obtained with two or three nozzles spraying the top and sides of the cotton plants.

This would probably not be true for the pink bollworm, which is more difficult to reach because of its feeding habits.

In the case of aerial equipment, a major activity of the Texas A. & M. Personal Aircraft Research Center is concerned with improving the spray distribution pattern from planes. We are now able to specify nozzle arrangements that should give reasonably close to optimum swath patterns for uniform over-all coverage, but only for the case of zero downwind. The effects of crosswinds are now being investigated. They have substantial effects on the patterns. The difficulty appears to be associated with the fact that the spray nozzles always produce a wide range of droplet sizes simultaneously—the crosswinds move the smaller droplets much further. Much remains to be done in finding ways of regulating droplet size so as to minimize the effect of crosswinds.

Much more attention needs to be given to equipment for disposal of crop residues, especially for their incorporation into the soil to do away with shelter for insects.

Stalk cutter-shredders need to be much further improved, specifically for the destruction of larvae of the pink bollworm carried in the residues of bolls and "bollies" left in the field after harvest. Many different machines have been tested by our engineers and entomologists, including experimental ones that crush the bolls and supposedly the larvae. New ones are in process of development and trial. High enough "kill" of the larvae has not yet been attained by the mechanical equipment, though progress is encouraging. Part of the difficulty lies in the fact that some immature bolls may fall to the ground and not be subject to mechanical crushing.



Note the hot air on the cleaners is blown through the cotton by a series of nozzles (similar to the air blast nozzles on a gin stand), forcing the dirt, leaf trash and stems through the screen. Cleaners made in any number of cylinders to meet local conditions.

STACY Cotton Drying, Cleaning and Extracting System

If your gin stands and feeder extractors are in good condition, all that is needed to bring your gin plant up to date is this modern STACY cotton conditioning system.

MANUFACTURED BY

The STACY COMPANY, Inc.

2704 Taylor Street Dallas 1, Texas

Closed view of our eight cylinder cleaner and drier.

• Dec. 15-16—Cotton Production Conference sponsored by National Cotton Council. Hotel Peabody, Memphis. For information, write National Cotton Council, P. O. Box 9905, Memphis 12.

1956

• Jan. 16-18—Southern Weed Conference. Hotel Jung, New Orleans. Dr. E. G. Rodgers, Florida Experiment Station, Gainesville, secretary-treasurer.

• Jan. 19-21 — Texas Cotton Ginners' Association Directors and Allied Industries Meeting. Corpus Christi, Texas. Ed H. Bush, 3724 Race Street, Dallas, executive vice-president.

• Jan. 30-31—National Cotton Council annual meeting. Biloxi, Miss. For information, write National Cotton Council, P. O. Box 9905, Memphis 12.

• Feb. 5-7—Texas Cooperative Ginners' Association, Texas Federation of Cooperatives and Houston Bank for Cooperatives joint annual convention, Austin, Texas. For information, write Bruno E. Schroeder, 307 Nash Building, Austin, executive secretary.

• Feb. 14-15—Southeastern Gin Suppliers' Exhibit. Biltmore Hotel, Atlanta. Sponsored by Alabama-Florida Cotton Ginners' Association, Carolinas Cotton Gnners' Association and Georgia Cotton Ginners' Association. For exhibit information, write Tom Murray, Room 714, Henry Grady Building, 26 Cain Street, NW, Atlanta, or Clifford H. Hardy, P. O. Box 512, Bennettsville, S.C. Concurrent with annual conventions of Alabama-Florida, Carolinas and Georgia ginners' associations.

• Feb. 14-15—Alabama-Florida Cotton Ginners' Association convention. Biltmore Hotel, Atlanta. For information, write Tom Murray, executive vice-president, Room 714, Henry Grady Building, 26 Cain Street, NW, Atlanta. Concurrent with Southeastern Gin Suppliers' Exhibit.

• Feb. 14-15—Carolinas Ginners' Association annual convention. Biltmore Hotel, Atlanta. For information, write Clifford H. Hardy, 400 Broad Street, Bennettsville, S.C., executive secretary-treasurer. Concurrent with Southeastern Gin Suppliers' Exhibit.

• Feb. 14-15—Georgia Cotton Ginners' Association annual convention. Biltmore Hotel, Atlanta. For information, write Tom Murray, executive vice-president, Room 714, Henry Grady Building, 26 Cain Street, NW, Atlanta. Concurrent with Southeastern Gin Suppliers' Exhibit.

• March 12-13—Cottonseed Processing Research Clinic. Southern Regional Research Laboratory, New Orleans. Sponsored by Valley Oilseed Processors' Association and USDA. C. E. Garner, 1024 Exchange Building, Memphis, Association secretary.

• March 12-14—Midsouth Gin Supply Exhibit. Midsouth Fairgrounds, Memphis. For information, write W. Kemper Bruton, P. O. Box 345, Blytheville, Ark. Arkansas-Missouri, Louisiana-Mississippi and Tennessee ginners' associations sponsor the exhibit and will hold their annual convention concurrently with it.

• March 12-14—Arkansas- Missouri Cotton Ginners' Association annual convention. Memphis. W. Kemper Bruton, P. O. Box 345, Blytheville, Ark., executive vice-president. Concurrent with Midsouth Gin Supply Exhibit.

• March 12-14 — Louisiana-Mississippi Cotton Ginners' Association annual convention. Memphis. Gordon W. Marks, P. O. Box 1757, Jackson, Miss., secretary. Concurrent with Midsouth Gin Supply Exhibit.

• March 12-14—Tennessee Cotton Ginners' Association annual convention. Memphis. W. T. Pigott, Milan, Tenn., secretary-treasurer. Concurrent with Midsouth Gin Supply Exhibit.

• March 18-21—National Peanut Council annual convention. Jung Hotel, New Orleans. For information, write National Peanut Council, DuPont Circle Building, Washington, D.C.

• March 25 or 26—National Cotton Ginners' Association annual meeting. Dallas, Texas. Clifford H. Hardy, Bennettsville, S.C., executive secretary. Will be held in conjunction with Texas Cotton Ginners' Association annual convention.

• March 26-27-28—Texas Cotton Ginners' Association annual convention. State Fair Grounds, Dallas, Texas. Ed H. Bush, 3724 Race Street, Dallas, executive vice-president. For exhibit space, write R. Haughton, president, Gin Machinery & Supply Association, Inc., 3116 Commerce Street (P. O. Box 7985), Dallas.

• April 9-10—Valley Oilseed Processors' Association annual meeting. Buena Vista

BARROW-AGEE LABORATORIES, Inc.
MEMPHIS, TENNESSEE
Analytical and Consulting Chemists and Engineers
Chemical Analysis of Vegetable Oils and Their Products • Insecticides
Material Testing, Cotton Fiber Laboratory
Consultation and Research
BRANCHES: Shreveport, La., Little Rock, Ark., Jackson and Leland, Miss., Cairo, Ill., Nashville and Chattanooga, Tenn., Atlanta, Ga., Decatur, Ala.

IDLED FOR REPAIR
MEANS MONEY LOST!
Profit or loss for a year is often determined by the uninterrupted operation of equipment during "season." That's where quality pays off!
By supplying Southwestern ginners with nationally known, quality equipment and supplies, Briggs-Weaver has been helping make every year a good year . . . a profitable year.
Whatever your need . . . from a cotton fan to a hydraulic pump; controls to conveying machinery; belting or boilers, etc.—just name it . . . then call Briggs-Weaver and get it—quickly!
BRIGGS-WEAVER MACHINERY COMPANY
DALLAS
HOUSTON
FT. WORTH
Distributors of Industrial Machinery-Supplies-Tools-Equipment-Since 1896

Hotel, Biloxi, Miss. C. E. Garner, 1024 Exchange Building, Memphis, secretary.

• April 12-13—National Cotton Compress and Cotton Warehouse Association annual convention. Galvez Hotel, Galveston, Texas. John H. Todd, 1085 Shrine Building, Memphis, Tenn., executive vice-president.

• April 22-25—American Oil Chemists' Society spring meeting. Shamrock Hotel, Houston. For information, write Society headquarters, 35 East Wacker Drive, Chicago.

• May 21-22—National Cottonseed Products Association convention. Statler Hilton Hotel, Dallas. John F. Moloney, 19 S. Cleveland Street, Memphis 4, secretary-treasurer.

• June 3-6—National Oil Mill Superintendents' Association annual convention. Plaza Hotel, San Antonio, Texas. H. E. Wilson, P. O. Box 1180, Wharton, Texas, secretary-treasurer.

• June 4-5—North Carolina Cottonseed Crushers' Association and South Carolina Cotton Seed Crushers' Association joint annual convention. Ocean Forest Hotel, Myrtle Beach, S.C. Mrs. M. U. Hogue, 612 Lawyers Building, Raleigh, secretary-treasurer, North Carolina association; Mrs. Durrett L. Williams, 609 Palmetto Building, Columbia, secretary-treasurer, South Carolina association.

• June 6-8—Tristates Oil Mill Superintendents' Association annual convention. Biloxi, Miss. For information, write Roy Castillow, 20 Lenon Drive, Little Rock, Ark., secretary-treasurer.

• June 10-12—Texas Cottonseed Crushers' Association annual convention. Statler Hilton Hotel, Dallas. Jack Whetstone, 624 Wilson Building, Dallas, secretary-treasurer.

• June 16-19—Alabama-Florida Cottonseed Products Association and Georgia Cottonseed Crushers' Association joint annual convention. Lookout Mountain Hotel, Lookout Mountain, Tenn. J. E. Moses, 318 Grand Theatre Bldg., Atlanta, secretary of Georgia Association; C. M. Scales, 322 Professional Bldg., Montgomery, Ala., executive secretary, Alabama-Florida Association.

• June 20-22 — Mississippi Cottonseed Crushers' Association annual convention. Buena Vista Hotel, Biloxi, Miss Gordon W. Marks, P. O. Box 1757, Jackson, Miss., secretary.

• Sept. 23-26—American Oil Chemists' Society fall meeting. Sherman Hotel, Chicago. For information, write Society headquarters, 35 East Wacker Drive, Chicago.

Cotton Yields Are Increased By Composted Gin Trash

Cotton gin trash that has been composted is credited with increasing his yields of cotton and vegetables on the farm of Clinton Ray, Mesa, Ariz.

Ray runs his irrigation water through compost pits in which gin trash has been treated with bacteria, and also spreads the trash on his fields.

Two years ago he was making one and three-fourths bales of short staple cotton per acre, while his 1954 yield was two and three-fourths bales. Long staple yields increased from fifteen-sixteenths of a bale per acre to one and three-fourths, Ray reports.

Dry Skim Milk To Be Sold To Feed Foreign Stock

Dry skim milk held by Commodity Credit Corporation will be sold on competitive bids for use as animal and poultry feed in foreign countries, USDA has announced.

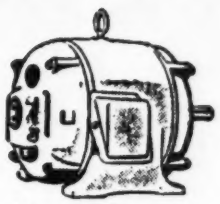
Since Jan. 1, 1952, USDA has disposed of 1,581,000,000 pounds of non-fat dry milk solids acquired under the price-support program. Of that total, 994 million pounds have been donated or sold for human food use—827 million abroad and 168 million in the U.S. In addition 587 million pounds have been sold for use as animal feed in U.S.

Department officials made it clear that use as human food would continue to be the principal outlet for surplus non-fat dry milk solids and that supplies for human use—both in the U.S. and friendly foreign countries—will be large enough to meet all foreseeable demands.

Valley Will Mechanize

Costs of hand labor will encourage increased mechanization in the Lower Rio Grande Valley of Texas, observers report. A survey of the four-county area indicates that growers expect to use more mechanical harvesters next season to reduce costs.

SPARE MOTORS



FOR GINS AND OIL MILLS
Delivered and Installed
Anywhere—Anytime

New Motors:
Allis-Chalmers
Century
A. O. Smith
Baldor

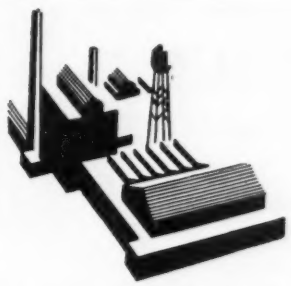
Electric Motor Repair and Rewinding

DAYTON BELTS

LUMMUS GIN REPAIR PARTS

LUBBOCK ELECTRIC CO.
1108 34th Street Phone SH 4-2336 — Or Nights, SH 4-7827
Or Consult Directory
LUBBOCK, TEXAS

GET what YOU WANT... when YOU WANT IT



As manufacturer's and distributors of tools, supplies and equipment for EVERY NEED of Cotton Gins and Oil Mills, we offer you the most complete service in the Southwest.

Call us for ACTION!

WELL MACHINERY & SUPPLY CO., INC.
1629 Main St. Fort Worth, Texas

COTTON BELT GIN SAWS

None Better the World Over!

• Gin and Mill Supplies • Gin Service

COTTON BELT GIN SERVICE, Inc.

"Largest Exclusive Manufacturer of Gin Saws in Amercia."

500 South Haskell • Phone TAylor 0389 • Dallas, Texas

2 National Favorites!

Wesson Oil

America's choice for salads... Stir-N-Roll pastry, biscuits, Chiffon cakes, frying and popcorn.

Snowdrift

No other shortening at any price is so creamy, so digestible and so light.

WESSON OIL & SNOWDRIFT SALES COMPANY

NEW YORK—NEW ORLEANS—SAVANNAH—SAN FRANCISCO—HOUSTON—CHICAGO

MODERN STEEL STORAGE

All-Steel Self-Filling Non-Combustible

BUILDINGS

For—

• COTTONSEED

• SOY BEANS

• PEANUTS

Designed, Fabricated and Erected

Confer with us on your storage problems

MUSKOGEE IRON WORKS

Muskogee, Oklahoma

laugh it off

A mother had been telling her small son some of the "facts of life." Finally she said, "Now, my boy, are there any questions you would like to ask? Anything at all, don't be afraid."

After a little heavy thinking the boy replied: "Well, yes, there's something I've been wanting to know for a long time. Just how do they make bricks."

• • •

Motorist: "It's not my fault. He was crossing in the middle of the block."

Policeman: "Don't tell me that. He's lying right here at the street intersection."

Motorist: "Well, he was in the middle of the block when I hit him."

• • •

Maybe it is a good thing that men don't understand women. Women understand women and don't like them.

• • •

Smith: I'm surprised that you permit your wife to go around telling the neighbors she made a man of you. You don't hear my wife saying that.

Jones: No, but she told my wife that she had done her best.

• • •

In New York an Italian was being examined in court after applying for citizenship. He answered correctly questions as to the name of the president and the capital of the U.S. Then came this:

"Could you become president of the U.S.?"

"No," was the reply.

"Why not?" persisted the official.

"You pleasa excuse," begged the Italian. "I very busy right now sella de peanuts."

• • •

Intuition is what enables a woman to put two and two together and get a man's number.

• • •

John: "My wife has the worst habit of staying up until one and two o'clock in the morning and I can't break her of it."

Joe: "What does she do all that time?"

John: "Waits for me to come home."

• • •

A schoolmaster was lecturing to a class upon the circulation of the blood. "If I stand upon my head," he said, "the blood will run down to my head, will it not?"

"Yes, sir," assented the boys.

"Then," said the master, "why does the blood not run into my feet when I stand on my feet?"

There was a pause for a few minutes, when a bright youth replied, "Please, sir, it's because your feet ain't empty."

• • •

Pete: "I'm going to get a divorce; my wife hasn't spoken to me for six months."

Jake: "Better think twice, wives like that are hard to find."

• • •

An author dedicated a new book to his wife, without whose absence, he said, it could never have been written.

• • •

If a woman wants to learn to drive, don't stand in her way.

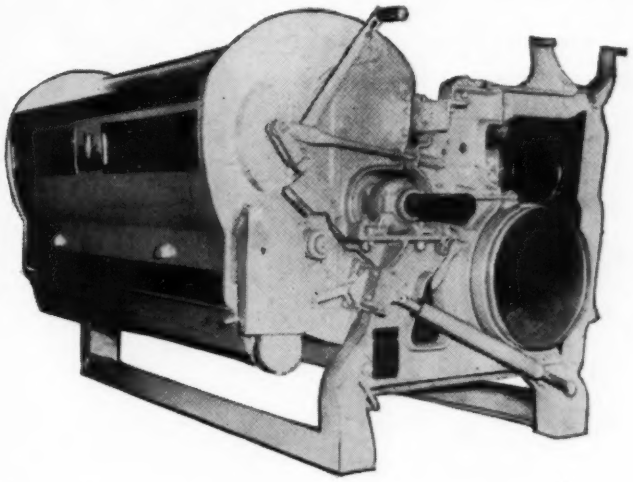
• • •

Examiner: Who was your mother before she was married?

Applicant: I didn't have any mother before she was married.

GULLETT

AIR BLAST COTTON GIN WITH LINT CLEANER BUILT IN



Clean Lint as You Gin with Gullett Lint Cleaning Gin

GULLETT LINT CLEANING GINS clean lint while you GIN, because the stream of lint at the point this Cleaning System is applied is very thin, and lint tends to extend away from the gin saws. The fringe of this lint strikes GRID BARS and loosens pin trash, leaves and motes which are readily sucked up by air, drawn in over GRID BAR by suction fan, thus removing leaves and trash, also keeping the GRID BAR clean. This Suction Nozzle is very similar to the Air Blast Nozzle that removes ginned lint from the saws and has ample capacity for removing trash, leaves and motes, making a very effective Lint Cleaner within the gin.

GULLETT GIN COMPANY

AMITE, LOUISIANA, U. S. A.

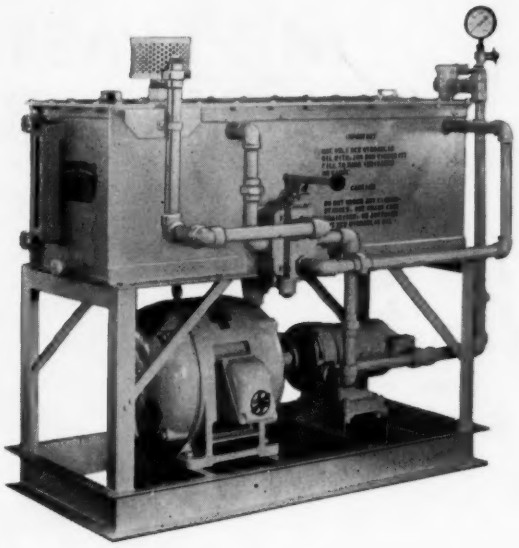
MANUFACTURERS OF COMPLETE LINE OF COTTON GINNING MACHINERY

HARDWICKE-ETTER COMPANY

NEW PRINCIPLE
HYDRAULIC PUMP

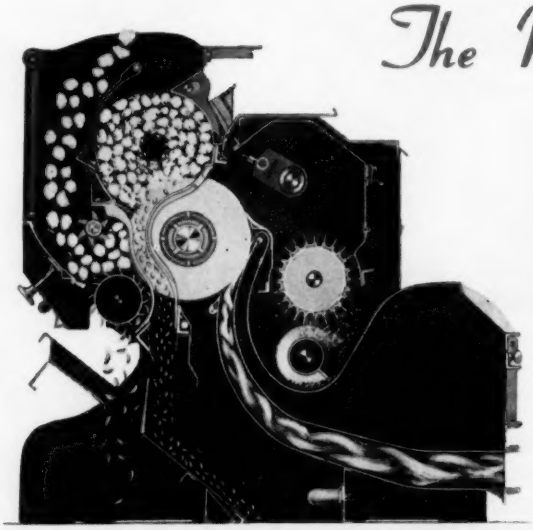
HIGH CAPACITY
FOR 80 OR 90 SAW GIN PLANTS.
SIMPLE IN OPERATION—
ONLY ONE MOVING PART.
COMPLETELY BALL BEARING,
DIRECT-CONNECTED TO MOTOR
OR BELT DRIVEN.

Write for Bulletin



HARDWICKE-ETTER COMPANY

MANUFACTURERS **Sherman, Texas**



The one Gin HAVING ALL features wanted by owners and operators

The New

MURRAY 90

"Safety Gins"

These amazing NEW 90-SAW GINS have been designed throughout with a view of affording operating personnel the greatest possible safety protection. The entire front assembly is hinged at the bottom, so that the top swings forward and away from Saw Cylinder. An important feature of the Recipro (Government Type) Lint Cleaning Bar Assembly is its self cleaning action. The reciprocating action of this device keeps the leading Edge of the Grid Bars clean, and also eliminates possibility of trash building up on top of Nozzle. It is a completely new Gin, of much heavier design, and requiring a minimum of adjustments.

THE MURRAY COMPANY OF TEXAS, INC.

DALLAS • ATLANTA • MEMPHIS • FRESNO